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A Clinical Lecture

ON

TWO CASES OF EXTENSIVE EXCISION OF THE COLON AND ILEUM FOR TUBERCULOUS DISEASE,

WITH SOME DETAILS OF TECHNIQUE.

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GENTLEMEN,—The removal of long tracts of the large intestine for malignant and other disease such as tubercle and actinomycosis is now a common operation and one giving excellent results, immediate and remote. And with the improved means of diagnosis which are almost daily being devised the procedure is certain to become more frequent and beneficial. But such operations are only justifiable when undertaken by those who fully realise their difficulties and dangers and who have studied their technique in every detail. So many minutiæ in manipulation as well as principles have to be kept in mind all through these long operations that only careful training amounting almost to habit will prevent some of them being overlooked. I venture to think that a few notes on the technique of these procedures gradually evolved in my own work, which includes numbers of cases dealt with in various ways, may be of use to others confronted by the inevitable difficulties inherent in such procedures. And from many inquiries which have reached me on the subject I gather that it has not yet been adequately discussed. As regards the diagnosis of the essential tumours of the large intestine, there is a general feeling that this is not as closely studied as is called for, and in the February number of the *Practitioner* I tried to help in this direction. And in the matter of getting at, and of the adequate and safe removal of, different parts of the large intestine for disease we need all the personal experiences which can be accumulated. It must not be forgotten that this branch of intestinal surgery is almost exclusively the growth of the last 10 or 12 years, before which time little was seen of it. Consequently much that may now be known to individual operators is not yet common property.

ABDOMINAL INCISION.

On the point of access to the various parts of the large intestine it may be said that with the exception of the central third of the transverse colon, for which a median incision is suitable, all other segments may best be reached through an oblique flank incision on either side. This not only gives as free a field as can be obtained by any reasonable opening, but also does so with a minimum of injury to the muscles, nerves, vessels, and fasciæ of the abdominal wall. As the skin adds but little to the actual strength of the parietes it can be freely incised, and should be so especially in obese people. The cut in the skin should begin near the end of the tenth or eleventh rib and run downward and forwards nearly to the mid-line between the umbilicus and symphysis pubis. When the external oblique aponeurosis is exposed its fibres should be separated rather than cut, and the same may be said of the two deeper muscles. It is surprising what a wide opening can be obtained in this manner without actually dividing the fibres of the muscles in question. The nerves which supply the rectus, the oblique, and the transversalis muscles are also preserved intact with a little care and very few vessels are cut. The innervation and blood-supply of the abdominal wall are by these means preserved and its future strength is unimpaired. If the opening is not large enough when it reaches the sheath of the rectus this may be opened and the belly of the muscle be drawn inwards without difficulty, still further enlarging the aperture. At this stage the aim should be to gain adequate room without spoiling the abdominal wall. Vertical incisions *outside* the rectus sheath are unsuitable in these cases, the tissues, owing to the direction of their fibres, giving but little hold for any form of subsequent stitching and tearing apart easily if there be any vomiting or coughing. Besides this, the nerves and vessels must be cut by such incisions, as they run downwards and inwards.

THE LOCAL AND GENERAL CONDITION.

Assuming now that on opening the peritoneum in the line described it be found, as was the case in my two last cases, now convalescent, that the upper part of the ascending colon, as well as the cæcum, are extensively involved and call for removal, what is the next step? This is largely determined by the local condition and the patient's strength. If it be found that the diseased area is sufficiently localised to justify an attempt to remove it at one sitting, this may be set about at once *provided there is no extreme obstruction* and that the last part of the ileum is normal or hypertrophied, but is otherwise healthy. On the other hand, if the ileum is found paresed, distended, and congested, and loaded with liquid fæces, no attempt at extirpation should be made at the moment. Suture of a bowel, paralysed, livid, and soaked with toxins, is almost certain to end in failure of union at the point of suture of the intestine, even if it can be accomplished without the escape at the moment of some of the acrid fæces or foul mucus. A careful distinction must therefore always be made between the thickening of the ileum owing to compensatory hypertrophy and that due to œdema from toxins absorbed from fermenting foul fæces. In the first case the bowel will probably be of normal colour and texture and not much enlarged; in the latter its lumen will be much increased and it will be œdematous, injected, or even livid and softened. If it be in this condition a loop should be drawn out of the inner angle of the wound and the latter closed completely around it. If the patient's general condition permits, this loop should not be opened for some days, when it may be incised, and a Paul's tube inserted for drainage, which must be kept up until the whole small intestine has been emptied and the bowel has returned to a healthy condition. This is accelerated, I think, by the administration of bismuth carbonate in 10-grain doses three times daily. Of the antiseptic value of bismuth in intestinal cases, as in others, I have no doubt from large experience; indeed, it is my routine to employ it. When the colour of the motions coming from the fæcal fistula has been continuously altered by the drug, and they have become otherwise normal, we may begin to prepare for the excision of the diseased portion of bowel. In cases of subacute or chronic obstruction where operation is not urgently demanded I believe also that the daily use of bismuth carbonate greatly improves the chances of asepsis during the subsequent removal of the growth. It is taken for granted that every expedient is employed at the same time to unload the bowels. But such attempts should cease at least a couple of days before the operation.

ONE SITTING, OR TWO?

When there is no acute or subacute obstruction the problem is fairly simple, as we are going to work on healthy bowel more or less empty. But we have yet to decide whether to do the operation in two stages or at one sitting; in other words, should a short circuit between ileum and colon be first made and then, after an interval of two or three weeks, the excision of the diseased bowel be undertaken, or should the latter follow *at once* on completion of the anastomosis of the bowel above and below the part to be removed? As a matter of fact, I have accomplished the end in view in both ways many times over quite successfully. On general grounds, if a patient is in fair condition, the procedure in one sitting is much to be preferred. The relief to the sufferer's mind of having the whole affair over at once is great, and, conversely, the apprehension of a second operation after the first is often very depressing and a prospect which all will not face. Nevertheless, the amount of time which is required for the double procedure, junction and excision, which will be on an average two hours (my last required one and three-quarter hours), is a matter of gravity which cannot be overlooked in view of the anæsthetic and the prolonged exposure and manipulation of the viscera. I have been amazed, however, in several cases to see how little ill-effects have been produced by the double operation at one sitting even when of the longest. My last case had little or no shock; another earlier one in which the condition was complicated by a fæcal fistula in the cæcum, and which lasted two and a quarter hours, showed absolutely no ill effect from the prolonged operation, and is now, after

more than two years, in splendid condition. Personally I am inclined to rely for guidance on this point on the following factors. If there are no signs of toxæmia and the bowels to be anastomosed are healthy; if there are no wide-reaching adhesions, and the patient's general condition is good when the short circuit has been accomplished in a reasonable time, the excision should immediately follow. Cases of marked toxæmia with distended proximal bowel are, of course, excluded; they must be treated, as already stated, by artificial anus and evacuation for a time. In many cases of less distended bowel and only slight evidence of absorption of toxins it is better also to make two stages of the procedure—that is, if it should be undertaken at all without previous drainage by artificial anus. Towards the completion of the short circuit, then, the patient's general condition should be carefully considered by surgeon and anæsthetist, and if satisfactory the immediate excision may follow.

DETAILS OF PROCEDURE.

There are several details in the performance of the junction of the small intestine proximal with the large distal to the diseased area which are of special importance. The point to be selected in each comes first. In the proximal *healthy* small bowel the lower down the junction is made the better. In the first place general nutrition is less deranged, and in the second there is less mesentery to be taken away, time and blood being thus saved. In the case of the colon there should always be a wide interval between the diseased portion (whether cancerous or tubercular) and the spot distal to it selected for the junction with the ileum. This view is based upon the known wide distribution of the disease along the submucous lymphatics proximal and distal to the infected part so admirably demonstrated by Handley and so often hitherto the cause of recurrence in our older cases. There should be no hesitation in selecting a spot in the colon 6 or 8 inches or more beyond the palpable and visible infiltration. Any closer will in many cases, at all events, fall within the area of infection.

TECHNIQUE.

When the spot for junction has been selected each part of the bowel is drawn out and emptied by pressure with the fingers. Then they are clamped longitudinally, either singly or, if possible, side to side with a Doyen's forceps. (N.B.—The blades of these instruments are often made too powerful by many manufacturers, and if so may injure the bowel.) Every part of the wound and between and around the coils and clamps should now be packed with one *continuous* long strip of sterile gauze from an uncut roll. Then the two coils are united for at least 2½ inches longitudinally at about a third of an inch from the middle of one of the tæniæ, a long "tail thread" being left at the end opposite to the needle. The latter and its thread are then covered for the present by a turn of the gauze roll to preserve it from contamination later. The thread I have employed for the whole procedure for many years is of fine linen. (Barber of Lisburn, Ireland, is the spinner of this material for Singer's sewing machines; No. 90 is the strength used.) This suture is carried by an ordinary sewing needle. The "side threading" pattern, 2 inches long, is the most convenient. It is now stocked by Meyer and Meltzer, of 71, Great Portland-street, W. The sero-muscular union being now half made the opening in one bowel is cut, for 2 inches or so, through the tænia in the case of the colon. This is best done with scissors, and the length of the hole should be the same as that subsequently made in the other. Great care is necessary in making these openings to avoid soiling the wound with the contents of the bowel. This is always a most anxious part of the operation, for, in spite of the emptying of the gut before clamping, there is always at least infected mucus within it. This is best removed with small rolls of gauze held in forceps, fresh material and instruments being used each time. Then the opening in the other coil is similarly made and cleansed. It, too, should be about one-third of an inch from the sero-muscular suture previously half made. Personally I have an objection to using any lotion or even sterile saline at this stage lest any of the fluid mixed with fæces or mucus should run down over the edges on to the intestine; dry gauze is certainly cleaner. This is a far more serious matter than the cleansing of a gastro-enterostomy junction, but can be accomplished with practice as results show.

A second needle with the same sized (No. 90, Barber's scale) thread is now taken, and at the opposite end at which the first sero-muscular suture was begun is made to transfix all the coats of both bowels at about one-eighth of an inch from their edges and is tied, leaving a long "tail thread." From this point the needle and thread are carried over the cut edges of both bowels and again passed through all their coats about a quarter of an inch from the first, and so on until the two edges are united from end to end by a continuous overcasting suture. Then the corner is turned, the greatest care being taken that the serous edges are accurately coapted without the intervention of any mucous membrane. When this continuous suture has thus brought opening to opening all round the suture is completed by tying the "needle thread" to the "tail thread" at the point of departure. Then the whole line of suture is carefully wiped clean of any mucus which may have been squeezed out. Wet swabs are undesirable except in special cases. The sero-muscular suture is now completed with the needle and thread which has been covered from contamination during the "all coat" suture. The whole area involved in the junction should now be carefully wiped front and back after release of the clamps and all traces of blood removed. The long continuous strip of gauze is now taken away, and being in one piece there is no danger of any of it being left behind in the abdomen. Round the anastomosis it is now well to wrap a fold of omentum and secure it with a few interrupted sutures.

By this time it ought to be apparent to both surgeon and anæsthetist whether the patient's condition is such as to justify the much longer and more severe operation of extirpation of the segment of bowel including the disease. But it is a nice question to decide, and on the whole it is better to err upon the safe side and to divide the procedures into two operations than to make too great a claim upon the patient's endurance at one sitting. The judgment even of the experienced operator will, of course, be at fault occasionally; nevertheless, experience will tell almost as much as skill. The advantage to the patient of getting over the whole undertaking at once is so very great, however, that some risk may be taken. Feeling thus, my own preference in making the preliminary ileo-colostomy in the majority of cases is for a "side-to-side" anastomosis which reduces the chances of infection from the bowel. In it there are no turned-in stumps of intestine left about which we need be anxious and the procedure is shorter. But where on careful exploration of the growth and its surroundings in a patient in good general condition an extirpation in one sitting seems justifiable, there can be no doubt that to join the end of the divided ileum to a slit in the side of the colon is the quickest and safest procedure. Here there is no blind stump of ileum left in the abdomen, the stitching of which would have prolonged the operation and increased the risks of infection. There is, of course, the divided stump of the ileum in the part to be taken away. But this will be securely clamped, wrapped in gauze, and immediately lifted out of the abdomen and further enveloped in sterile towels out of the way of contact with anything which could infect the peritoneum or the wound in the abdominal wall. This "end-to-side" ileocolostomy is commenced by a sero-muscular suture between the undivided ileum and colon, which includes half the circumference of the opening. Then the ileum is clamped with two pairs of Doyen's clamps, the first close against the line of suture just made and the next half an inch below the first. Between the two the ileum is cut across as close to the first pair as possible. Then the cut surface of the partly sutured ileum is wiped clean and covered with gauze for the present, the clamp on it being removed. The other end with the clamp still firm is wrapped in gauze, and the mesentery belonging to it is divided between ligatures until the bowel can be well drawn out of the abdomen and wrapped in sterile towels for the present. The gauze is now removed from the partly sutured end of the ileum, its open end again cleansed, and a corresponding opening is made in the colon through one of the tæniæ, the edge of the cut being about one-third of an inch from the previously made sero-muscular suture line. Then the "all coat" suture is made uniting the two corresponding openings between ileum and colon as previously described. When all round has been wiped clean the sero-muscular suture is completed and tied to its tail thread. In cutting across the ileum care should be taken to remove more of the free

margin than of that attached to the mesentery. The blood-supply of the free margin is by this means more certain to be adequate. This rule holds for all transverse divisions of the bowel in any part of its course, large or small. If now the patient's condition is *not* good the distal end of the ileum above the ileo-cæcal valve can be turned in and sutured, cleansed and returned into the abdomen, or may be left hanging out of the wound unsutured but enveloped in gauze drawn round it with a tight strong thread, the rest of the procedure being deferred.

But the patient may be in good condition as regards blood pressure, respiration, &c., and it may be felt that the whole procedure of extirpation may be best completed at one sitting. If this be so the original gauze packing in one continuous piece such as I have always used is removed with no danger of leaving anything behind. It is otherwise if short pieces are employed. It is very easy to overlook one of them, especially when soaked in blood-stained serum. No detached small piece of gauze should ever in my opinion be allowed within the abdomen or other large wound which is not immediately taken out. The wound is now packed off again with a fresh gauze roller paid into it, while the still unrolled part is placed in a sterile box or towel on the abdomen. What is soiled can be from time to time withdrawn and cut off, while a fresh part is inserted from the roller. When the whole field of operation has been thus freshly guarded the peritoneum reflected from the cæcum and ascending colon to the parietes should be divided with scissors, one blade of which is inserted under it. There are few or no vessels to be considered here and no time is lost. This only becomes an anxious matter in the neighbourhood of the kidney, duodenum, and ureter, when the whole cæcum, ascending colon, and part of the transverse has to be removed, as was the case in the two patients to be referred to. When the peritoneum is divided great care must be taken to remove all glands and the surrounding areolar tissue in which the lymphatics run, together with the affected bowel.

The whole of the involved intestine from the ileo-cæcal valve to the anastomosis is by this time mobilised, and the inner part of its mesentery, which contains its vessels and lymphatics, can be well defined when stretched. The vessels must be carefully secured far from the intestine, but with great care not to include the superior mesenteric or trunk of the middle colic. The right colic can be tied off an inch from its origin, but the middle colic should not be ligatured until after it has given off its left colic branch, so that the anastomosis with the left colic of the inferior mesenteric be not interfered with. The corresponding veins will also require ligatures, and the fat and lymphatic tissues should be tied off with them.

By this time the whole ascending and part of the transverse colon are detached and the tube can be cut across an inch and a half from the previous junction with the ileum. This should be done between two Doyen's clamps placed close together, but not before a fresh turn of the gauze roller has been placed under the point of division. The separated portion containing the disease is carefully lifted away with all due safeguards as to avoidance of soiling with the fresh cut stump held in the clamp. The remaining proximal stump still held in the clamp is carefully cleaned and a second clamp is put on the bowel proximal to the first, and gently closed. Then the first, which should have been tightly applied, is removed, and the edges, which are found flattened together, are overcast easily with a suture. Having again been wiped over, the Doyen is taken off and the line of sutured bowel is pushed into the lumen beyond and a continuous sero-muscular suture applied to retain it there. The stump is cleansed again and the gauze packing removed in one strip.

It only remains now to revise the whole field of operation, close all bleeding points, remove any clots and loose shreds of fatty and areolar tissue, and suture the wound in the abdominal wall. This, as a rule, can be done completely at once in layers. If the packing has been carefully carried out from beginning to end, the edges—serous, muscular, and cutaneous—will be clean, and primary union will be obtained. But there may be a doubt on this point, in which case the wound is better only *partially* sutured over a gauze packing left in for 24 hours. But it is an enormous gain to the patient to get over the whole procedure once for all, and careful packing and manipulation will secure a degree of asepsis quite compatible with primary union. The earlier operations included drainage as a rule, but this was found to prevent in some cases the coaptation of the serous surfaces round the anastomosis and stumps, and the proper deposit of lymph around them, so that not infrequently a slight fæcal fistula was the result. This almost certainly closed in a short time, but was a blemish on the operation. Now with greater command over the technique of aseptic removal and immediate and complete closure of the abdominal wound such leakages are rare and primary union is the rule. If such is the case the after-treatment is simple. Fluid diet in small amount can be taken from the first day onwards, and after the bowels have been moved naturally, as they will be in a few days, semisolid and later full diet.

The cases alluded to in the title of this lecture appear in several ways as deserving of record, and particularly as illustrating the method of operation described. They have a further bearing upon the whole question of tubercle of the intestine and its treatment, which, however, is too large to be dealt with here.

CASE 1.—The patient, an unmarried female, aged 40, was sent to me in a very emaciated condition on account of a fæcal fistula in the right groin, dating from an operation for fæcal abscess about one year before, assumed to be due to appendicitis. At the operation a suspicion, I was told, arose that tubercle was at the root of the matter. Besides the fæcal fistula a large mass occupying the whole cæcal region could be made out when I came to examine the patient.

On June 25th, 1908, under spinal analgesia, I included the scar and fistula between two curved incisions and then stitched the two included skin edges over the fistula, using the threads besides to tie a thick layer of gauze over this to prevent any soiling of the subsequent deeper wound. Then the two incisions were deepened into the abdomen. It was then seen that the whole cæcum and most of the ascending colon were involved in advanced tubercle. Besides this, the last 18 inches or so of the terminal portion of the ileum were studded with tubercles as large as small peas (*vide* illustration). The cæcum was mobilised as above described, but with the greatest difficulty owing to very dense cicatricial adhesions all round and to the omentum. During the necessary dissection the cæcum gave way, but the hole was clamped, wiped, and enveloped in gauze. The hepatic colon was clamped, divided, and its end turned in and sutured. The ileum was now cut across over two feet from the valve and the whole tuberculous bowel with its mesentery and many infected glands removed from the abdomen as above. Then the end of the ileum was planted into the side of the transverse colon about two inches from its closed end. The whole procedure was a most complicated one owing to adhesion, infiltration, and glandular infection as well as the difficulty of determining how much of the ileum should be taken, for many small tubercles were scattered widely and I have no doubt that some were left behind above the line of junction. The wound was almost closed, but as there was some justifiable doubt as to the whole of the operation having been carried out without infection from the fistula and from the tear of the cæcum I thought it better to put a gauze drain into the upper angle. This was removed in a few days, but a sinus remained at the spot for a long time until the patient went to the country. Otherwise the rest of the wound healed perfectly. The operation lasted for 2¼ hours, but the anæsthesia was absolutely satisfactory to the surgeon and to the patient, who had expressed a wish to escape from chloroform. There was no sickness and no shock.

The parts removed (*vide* illustration) are thus described in the hospital surgical registrar's notes. "Cæcum with 4 inches of colon and 27 of ileum. Colon where cut through fairly healthy, though thickened and showing numerous tubercles on its peritoneal aspect. There is some ulceration of the mucous membrane, especially towards its lower end, where the whole circumference is ulcerated. Cæcum a mass of fibrous tissue, the walls ¼ to ½ inch thick and very rigid; lumen very small, mucous membrane greatly ulcerated, especially round the stump of the fistula. Some inches above the ileo-cæcal valve the lumen of the gut contracted by thick, fibrous material to such an extent that it will not admit the little finger. Above this in the ulcerated colon are five plum stones. The ileum shows numerous ulcerations of the mucous membrane, some healed, many recent, and encircling the bowel. About 22 inches up the ileum is a healed ulcer contracting the bowel. At the cut end the ileum, though thickly studded with tubercles, is

fairly healthy, showing no recent inflammation or ulceration."

I have recently seen this patient nearly three years after operation. She is plump and ruddy, and the bowels act regularly. Her local and general condition, in short, appears perfect, and her high spirits are remarkable.

CASE 2.—The patient, a soldier, aged 32, was sent to me as a case of probable carcinoma of the ascending colon. The diagnosis was based on a history of chronic intermittent obstruction and wasting with tumour in the flank, and on the discovery of a tumour from cæcum to hepatic flexure with infected glands during an exploratory laparotomy in December, 1910. Nothing further was done then and the wound was closed and healed per primam.

On admission, Jan. 23rd, 1911, the tumour, though large, appeared to me to have increased, but slowly, and the general condition to be less serious than might be expected in a young man who was known to have obstructive symptoms from tumour (presumably malignant) since at least the previous October. It appeared probable that the disease and the wasting might be due to tubercle, and this view gained support from the presence of tubercle bacilli in the sputa and the physical signs of dry phthisis in the right apex. The hope was justified that the symptoms might be due to a tubercular mass in the walls of the colon, as in the last case, and the glands only infected from this. After due preparation the same oblique skin incision was made as above, the muscle fibres separated, and the abdomen opened. The mass felt consisted of cæcum, infiltrated ascending colon, and hepatic flexure and glands obviously infected but not carcinomatous. This mass was widely adherent by fibrous bands to the border of the liver, kidney, and duodenum, and the omentum was also extensively adherent to it. The diagnosis of tubercle having been confirmed at once by a microscopic section of a gland, a lateral anastomosis of ileum to middle of transverse colon was made and the wound was closed. Spinal analgesia made the operation much easier than usual, but time had been lost in the examination of the relations of the tumour, and it was thought better to postpone the extirpation of the disease until a later period. At the end of a fortnight all was well, and the bowels had been thoroughly unloaded naturally through the anastomosis. The wound, which had healed per primam, was again opened up, and the last part of the ileum, cæcum, ascending and part of transverse colon up nearly to the anastomosis were excised with the same details as above. There were extra difficulties in this case in dissecting the mass from its adhesions with the liver, kidney, and duodenum, and in extirpating the widely infected glands. But in the further course of the case there is nothing to note except perfect recovery. There was no drainage, and the wounds healed without a flaw.

a, Divided ileum. *b*, Divided colon. *c*, Ileo-cæcal valve. *d*, Contracted portion of cæcum. All parts studded with tubercles.

When the man came back from the seaside to report himself he was in rude health, could eat any diet, and his bowels acted normally. The tubercle bacilli had disappeared from what he coughed up.

DONATIONS AND BEQUESTS.—Subject to certain legacies and conditions the Glasgow Royal Infirmary, the Western Infirmary, Glasgow, and the Victoria Infirmary, Glasgow, will receive about £40,000 each under the will of the late Mr. J. S. Dixon. The Glasgow Sick Children's Hospital will receive about £20,000.—The late Lieutenant-General Mostyn de la Poer Beresford has bequeathed £1000 to the Free Home for the Dying, Clapham Common.—The executors of the late Captain Ralph Slazenger have allocated £1000 of the £2000 left for charitable purposes for the endowment of a bed in King Edward VII. ward of the Royal National Orthopædic Hospital.—By the will of the late Mr. Edmund B. Gibson the Saffron Walden Hospital will subsequently receive £500.

THE OPERATIVE TREATMENT OF MALIGNANT DISEASE OF THE PELVIC ORGANS.

BY ALEXANDER DON, M.A., C.M. ABERD., F.R.C.S. EDIN.,
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MALIGNANT disease of the pelvic organs is so common and its operative treatment is yet so varied and on the whole so unsatisfactory that it is highly probable that no finality of method of dealing with the disease has yet been reached. The crux of the whole problem seems to be the disposal of the ureters and the eradication of malignant metastases in the walls of the pelvis. Were we sure that enlarged glands lying near the external and common iliac vessels were malignant many cases would have to be given up immediately on opening the abdomen. But these enlarged glands have been found so often to be merely inflammatory that though everyone is convinced that they should be removed whenever practicable few look upon them as an absolute bar to attempting eradication of the disease. The lymphatic distribution from the pelvic organs has been thoroughly worked out by innumerable investigators, and though their findings do not invariably agree it is safe to assume that no part of the pelvis proper can be held to be unaffected in malignant disease of its organs except the small part in front of the bladder, and that only when the disease is not primarily in the bladder itself.

The operation for malignant disease of the uterus, usually known in this country as Wertheim's operation, and the abdomino-perineal operation for rectal cancer, may be taken as examples of real attempts to deal radically with malignant disease of the pelvic organs, and in simple cases, and in the hands of practised operators, they have obtained a position in practical surgery. But the ordinary surgeon still dreads to attempt such delicate operations, and it is in his hands, chiefly from want of experience in the particular operation, that the mortality is excessive and injury to the ureters is so common. The latter accident is capable of rectification at the time if the damage is noticed by the operator, or may be cured by a later operation, but generally this is by the sacrifice of a kidney, or there is left intermittent difficulty with micturition.

In a case of cancer of the uterus I on one occasion was compelled to sacrifice a portion of the bladder with both ureters, and though the patient survived for a considerable time and died from an indefinite lung trouble the method adopted to benefit the urinary discomfort does not deserve more than a passing notice. In separating the uterus from the bladder the latter was opened, as was immediately evident, by tearing through the growth. Palpation revealed malignant infection of the bladder mucosa, covering an area of 1 by 1½ inches, with its long axis antero-posterior and involving the base of the bladder about the ureteric openings. This area, along with about half an inch of margin of healthy bladder tissue, was clipped away and removed along with the uterus. The ureters were divided before they reached the uterus but were not otherwise disturbed. After removal of the growth a few catgut sutures fixed the edge of the cut bladder to the front of the rectum a drainage-tube being left in each corner fixed by a catgut suture and protruding from the vagina. The patient made a normal recovery from the operation, but all the urine escaped per vaginam. This was rectified later by closing the vaginal orifice, and when the patient was last seen, a year after the second operation, she expressed herself as quite comfortable.

The operation was done five years ago and was by no means a complete one, and had the patient lived or even been available for examination of the pelvis a couple of years or so after removal of the tumour, in all probability some recurrence would have been noted; but as it happened she left the district, and only a meagre account of her last illness was obtainable from her friends. In discussing this case with another surgeon, I learned that in at least one case where part of the ureter had to be sacrificed a German surgeon had successfully grafted a shaving from the skin, cut slightly thicker than a Thiersch's graft and coiled in the form of a tube. Though no opportunity has yet been afforded of trying an alternative method, it seemed likely that if such a graft lived the ureters themselves would act better if they could be attached to another immoveable part of the bladder. The usual method of attaching them to the peritoneal surface exposes the ureters to periodic changes of tension, besides leaving them uncovered by peritoneum.

The following operation was done with comparative ease on a male cadaver. A Mackenrodt's incision, extending from one superior iliac spine to the other, and reaching to within half an inch of the symphysis pubis, divided all the structures of the abdominal wall. With the cadaver in the Trendelenburg position, the bowels were pushed upwards, an abdominal gauze cloth was packed in, leaving sufficient edge outside to cover the convex upper flap, which was then stitched at its centre to the tissues of the sacral promontory by one silkworm-gut suture. This effectually retained the intestines and gave an excellent view of the whole pelvis. The ureters and anterior division of the internal iliac vessels were located and the peritoneum opened by a vertical slit over the vessels, which were at once tied with a catgut ligature. The slit in the peritoneum was extended upwards to the division of the common iliac, and downwards along the side of the pelvic colon to the base of the bladder. The peritoneum was reflected outwards on both sides. The central flap of peritoneum was reflected upwards. The ureters were freed, from the brim of the pelvis to the base of the bladder, by blunt dissection and a few slips of a knife or scissors, care being taken not to injure them or their vessels by too close dissection or rough handling. The lower end of the ureter was gently pulled upon, and a pair of artery forceps occluded its vesical end, below which it was cut across. An opening was next made over the front of the bladder in the space of Retzius by reflecting the peritoneum from the lower side of the abdominal wound, and a pair of dressing forceps was passed from this opening under the peritoneum along the pelvic brim and out under the flap that had been dissected up. The end of the ureter was grasped by this forceps, and brought along the tunnel and pushed through a hole made in the front of the bladder. This can be done without the least tension on the ureter, especially if the outer edge of the fixed part of the bladder be utilised. A single silk suture fixed the ureter. The whole of the pelvis could then be cleaned out.

The operation was continued as for cancer of the rectum. The sigmoid flexure was pulled down till it became taut, and ligature of its mesentery was begun at this point. After the superior hæmorrhoidal artery is secured the rest of the mesentery can be stripped clean off from the brim of the pelvis down to about the top of the coccyx. There would be some hæmorrhage from the middle sacral artery, and probably from the lateral sacrals, but with a clear view of the pelvis these could easily be secured. If the base of the bladder be infected part of it can be removed without hæmorrhage as the vesical arteries are already controlled. Nothing need be left on the pelvic wall except the nerves and muscles. The colon was next ligatured in two places as low down as convenient, and divided between the ligatures with a knife, which was then discarded. The ends of the cut bowel are immediately covered with gauze to prevent any leakage. This is a speedier method than inverting the ends and needs less handling. It is also preferable to division by cautery, the handle of which cannot easily be kept aseptic. The long piece of colon was brought out at the left extremity of the wound and covered over, while the short end was dropped into the bottom of the pelvis. Division of the colon at this point does not make such a perfect specimen for preservation, and suggests a possibility of malignant infection, but this with the precautions mentioned above is hardly possible. The peritoneal flaps were next stitched together and completely closed the floor, and this diaphragm would be pushed right down to the bottom of the pelvis by the weight of the bowels. The upper end of the bowel was fixed into the left corner of the abdominal wound, and the rest of the incision closed by layer sutures. A rubber drain would be left in the space of Retzius as a precaution against urinary leakage. The rest of the operation could be done quickly and bloodlessly by any of the usual methods from below. If part of the bladder had been removed, there would be leakage of urine for a time and a drain would be necessary. In every case two-hourly catheterisation of the bladder must be done for ten days to allow the ureters to get quite firmly fixed.

If this operation be done with spinal anæsthesia there will

be practically no shock, and the operation should be finished in about an hour, no time being wasted in securing bleeding points. Krönig showed that both internal iliacs can be occluded without interference with the vitality of the bladder, and if the uterus is to be removed the superior hæmorrhoidal and sacral arteries would afford sufficient blood-supply to the rectum. If the base of the bladder were removed along with the uterus, which would seem to be almost necessary in cancer of the cervix, there would be leakage through the vagina, but this in malignant disease, which occurs late in life, may be rectified, as the vagina can be closed at a future time and made part of the bladder.

Hitherto all rectal operations for cancer, even Kraske's, have been followed by a huge mortality from shock, hæmorrhage, and sepsis. But by the method described the last could be almost abolished. Hæmorrhage in most of the low operations is very free, and the tying of vessels, even after the difficulty of catching them is overcome, is so awkward that sepsis is nearly certain to follow. Shock oftener follows pelvic operations in males, who do not seem to recover from loss of blood in such so speedily as do females, and whose pelves are not so tolerant of surgical interference. I have long been impressed with the idea that general anæsthesia, however induced, is followed by shock in proportion to the handling of sensitive tissues as much as from the length of time taken by the surgeon to do the operation. Afferent and efferent impulses are transmitted as if there were perfect consciousness, and only by blocking these impulses by spinal or local anæsthesia can shock in such cases be modified. The operation is recorded in the hope that specialists in pelvic surgery may consider its practicability.

Dundee.

THREE CASES OF CONGENITAL HEART DISEASE,

WITH NOTES OF THE FAMILY HISTORY RELATING TO THEM.

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THE clinical story of these cases begins with a note relating to a lady, Mrs. A. B., and the particulars which I shall describe very concisely have come to my knowledge during the last 30 years. The details of the several defects recognised in the three cases have not been secured with accuracy, but the important facts as to their incidence admit of no doubt.

Family history.—Mrs. A. B. was one of several daughters of a gouty man who died over 80 years of age. Her mother was also long-lived, and appears to have suffered from some variety of chronic arthritis. Mrs. A. B. married at the age of 17 and went out to India with her husband, who was a rather delicate man, and died some years later at sea from chronic dysentery. One son, Mr. B. C., was the issue of this marriage, born in India. He has been healthy and vigorous and still survives at the age of 60, with some slight indication of a gouty proclivity.

Mrs. A. B. married a second time a sufficiently robust man, aged 47 years, and had by him two sons and three daughters, all now living and healthy. Soon after this marriage she became very stout (arthritic obesity). After 12 years this husband died from cardiac dilatation and hemiplegia.

Later, at the age of 37 years, Mrs. A. B. married a third time, the husband being a healthy man of about 30 years of age. In this man's family there were signs of gouty proclivity in both parents. (His father died at the age of 79 years from the effects of interstitial nephritis. He had Heberden's nodes, and these also developed in others of his children in later life, with obvious gouty symptoms.) During her pregnancy with her first child by this (third) marriage, Mrs. A. B. suffered from gouty pains in the joints, and began to lose a good deal of her obesity. A female child was born at term, somwhat small and weakly, and with a languid circulation. In the course of the second year of its life it was still feeble and backward, although not rachitic, and had a tendency to dyspnœa on exertion, and progressive clubbing of finger-ends, with duskiness of the lips. An examination of the heart at this time, by the late Dr. S. J. Gee, revealed the existence of a murmur in the pulmonary arterial area. The child remained delicate and died from scarlet fever in its thirteenth year.[1] There was no necropsy.

Eighteen months later Mrs. A. B. gave birth to a second daughter. This child was with great difficulty made to breathe on delivery, and was very cyanotic. It lived only 14 hours. A necropsy revealed a small opening in the septum ventriculorum and patent ductus arteriosus, and extremely small pulmonary veins. The mother had suffered for some weeks during her pregnancy from severe gouty pains in various parts of the body.

Two years later she gave birth to a healthy male child, who is still living and robust, and leading an active life.

In the course of the next three years Mrs. A. B. was found to be the subject of gouty glycosuria, little controlled by dieting. She lost weight very gradually and became feeble. She died at the age of 56 years from pleuro-pneumonia, having suffered from glycosuria in varying degree for 12 years. The husband has since his marriage had several gouty attacks of arthritis, lumbago, and phlebitis.

The third case of cardiac malformation occurred in the first child born to Mrs. A. B.'s son by her first husband. This son married a daughter of a distinctly gouty man, who had "regular" arthritic gout at intervals. Their first-born daughter showed obvious signs of congenital heart disease from an early date, suffering from dyspnœa, some degree of cyanosis, and backwardness in growth. There was a murmur heard to the right of the sternum, and the right ventricle was enlarged. This child hardly grew at all after eight or nine years of age and was very delicate. She died about the age of 13 years. There was no necropsy. A second daughter was born after this child and has maintained good health.

The children by the second husband of Mrs. A. B. have all grown up in satisfactory health. The eldest and second of the daughters and one of the sons have married and had normal children.

The third husband of Mrs. A. B. married a second time a daughter of an exceedingly gouty father, and has had two healthy children by her.

Remarks.—There are some noteworthy points in this remarkable family history. First, we find that the mother of the first son (Mrs. A. B.) came of a gouty stock. This son next married into a family with a gouty history, and his first child had a malformed heart. Secondly, we note that the children of the second husband of Mrs. A. B. were all free of such malformations. Thirdly, we find that two of the children by the third husband (gouty history on both sides of the family) had cardiac malformations. Fourthly, it appears that a coalescence of gouty proclivity in both parents in the third marriage tended to favour these malformations. This is in accordance with an apparent law that an intensification of any diathetic habit of body, both parents being the subject of it, leads to graver manifestations in the offspring.

I am not prepared to describe these instances just recorded as in any way indicating that such untoward sequels of the intermarriage of persons, each issuing from gouty ancestors, are to be regarded as common or likely to occur. I have no knowledge of any histories or literature in which such events have been noted or recorded. The facts related here are certainly striking and noteworthy, and I think they are worthy of publication if only to stir further inquiry.

Dr. A E Garrod[2] has recorded several cases of congenital malformation of the heart in which there was a strongly marked history of true rheumatism. In one instance the mother had rheumatic fever in the seventh month of her pregnancy. He directs attention to other deformities associated with the cardiac defects. In 11 out of 15 cases there was distinct history of rheumatic fever in near relations.

It is certain that subjects of the arthritic habit of body are specially prone to infection in early life by the specific (exogenous) toxins of rheumatism, and in later life to generate the (endogenous) morbid metabolic products which determine the onset of gout in many and varied phases.

It is now generally admitted that the cardiac malformations,

[1] Sir William Jenner was of the opinion that such children were bad subjects for the exanthemata.

[2] St. Bartholomew's Hospital Reports, vol. xxx. p. 53, 1904, "On the Association of Cardiac Malformation with other Congenital Defects."

of which we have clinical and pathological knowledge, are determined, and occur, about the seventh week of fœtal life.[3] Hence the old idea of shocks and strong maternal impressions during any period of pregnancy is now much, or altogether, discredited by pathologists as an etiological factor in such cases, and the majority of such cases are rightly to be regarded as developmental defects, and not as results of endocarditis in the embryonic stage.

While paying little attention to the idea of strong maternal impressions, we may yet suspend our judgment respecting the influence sometimes of lesions due to rheumatic, gouty, and syphilitic toxins on the fœtal endocardium. The latter are certainly most rarely met with. We have to remember that the placenta is permeable by micro-organisms and toxins, and further studies in this direction are very desirable.

THE VARIABILITY OF AGGLUTINATION OF B. TYPHOSUS AND M. MELITENSIS BY NORMAL SERA AND ITS IMPORTANCE IN LABORATORY DIAGNOSIS.

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IN spite of the discovery of many new tests for the existence of specific bacterial disease the test of serum agglutination continues to hold an important place in diagnosis. This is especially the case for typhoid fever, and physicians still rely very largely upon laboratory findings for its diagnosis.

Now a very common question which is put by the physician who receives a report upon a serum which he has sent to a bacteriological laboratory is, What dilution of serum giving a definite agglutination am I to regard as diagnostic of typhoid fever? The laboratory report may only state the fact of agglutination in a given dilution and consider that that is all the help it can give in the matter. For purposes of discussion one feels inclined to alter the form of the physician's query, and ask, What dilution is to be regarded as affording strong evidence that the disease in question is typhoid fever? The answer should strictly be based upon the degree of certainty afforded by the reaction. In some cases the reaction cannot be regarded as justifying an altogether positive statement, and again different persons hold different views as to what constitutes certainty. One person is satisfied when the odds in favour are 10 to 1; another requires at least 100 to 1. We may put this in a more familiar form by saying that one diagnostician is pleased when his diagnoses are correct nine times out of ten, and another only when they are correct 99 times out of 100.

Agglutinations in low dilution cause particularly great difficulty, not only because of our want of exact knowledge of the variations which may occur in a healthy serum, but also because of the necessity for differentiation of the action of co-agglutinins. A "typhoid serum" will to a greater extent than a normal serum agglutinate B. coli, B. paratyphosus, and others of this group. A normal serum, again, will agglutinate the B. typhosus up to a certain dilution, and we require to know, not only to what dilution, but also the frequency of its occurrence. Lastly, different strains of the typhoid bacillus show great differences in their susceptibility to agglutination by typhoid, paratyphoid, and normal sera.

Now many standards have been laid down as to the degree of agglutination which is characteristic of typhoid fever. Most of these may be called safety estimates. Few of them refer to such points as the degree of agglutinability of the particular laboratory strain used with normal sera, and seldom refer to the degree to which confusion with paratyphoid disease may occur. An ideal way of expressing the results of an agglutinating test would be to give it in this way:—

Agglutination with B. typhosus up to 1 in 64; probabilities against the serum being normal, 10,000 to 1; against its being a B. paratyphosus serum, 80 to 1; against its being a B. coli serum, 50 to 1.

I have only taken the odds at random in order to illustrate and explain the principle which is involved. But how are these probabilities to be arrived at? Briefly stated, they are to be obtained by an application of statistical methods. Thus they may be obtained for normal sera by examining a very large number of healthy individuals as to the agglutinating power of their sera—so large a number as to give, by its very largeness and uniform distribution of values, approximately actual probabilities of occurrence for any given dilution. But it is almost impossible to obtain numbers large enough to satisfy this requirement. The next method would be to take a reasonably large number of individuals, set down the frequency distribution of agglutination dilutions, and fit a curve to the observations. This curve would give the real probabilities with a correctness which would depend partly on the actual numbers observed and partly on the degree of variation found. But to fit such a curve to a distribution requires a mathematical knowledge which many laboratory workers like myself do not possess.

The worker who has not the knowledge, and who is dissatisfied with such a very defective presentment of his facts as an average or a single percentage, has still a method open to him. It consists simply in giving the whole of his results in the form of a frequency distribution, and calculating by simple arithmetical procedure the measure of the variability of that distribution. It may then be possible on certain assumptions and in simple cases to calculate the probabilities for and against a particular value corresponding, as the case may be, to a normal state or to a specific diseased state. It is most important, also, to state exactly the circumstances under which the frequency distribution has been constructed. This last precaution is required in order to set at rest any doubts which might arise regarding the possibility of selection of cases. My own work refers to the differentiation of test typhoid and Mediterranean fever sera from normal sera. My cases were simply taken haphazard from amongst the patients attending the Pasteur Institute for anti-rabic treatment. I think I may, therefore, exclude the possibility of selection here. The individuals were all adults—natives of India.

The calculations of variability and probability referred to above have not been actually made because the successive dilutions used in testing the agglutinating power were, through inadvertence, increased not additively but as simple multiples of each previous dilution. That is to say, the intervals between my groups were not the same throughout, which they ought to have been. The frequency distributions only are given.

TABLE I.—*Agglutination B. Typhosus with Normal Sera; Strain "Douglas."*

Emulsion killed at 60° C. for half an hour; 0·5 per cent. carbolic acid added.

Dilutions of serum.	Under 2	2	4	8	16	32
Frequency	38	55	17	1	1*	0

* History of long-continued fever 12 months ago.

All agglutinations were taken to their end point as given by the series of dilutions 2-fold, 4-fold, 8-fold, 16-fold, 32-fold, 64-fold, and so on. Only the complete agglutination was recorded. An agglutination at a 4-fold dilution, and negative at 8, might have agglutinated at the point 6, and it is unfortunate that these intermediate values were not determined throughout. The series by simple multiples, however, allows of a simpler technique.

Looking at the distribution, we see that the agglutinations given by normal sera are very low, quite a large proportion not giving the reaction even in a two-fold dilution. In order to determine (1) what the effect of heating of the emulsion and addition of carbolic acid might be on the agglutinability of the organism, and (2) what the variations in agglutinability of different strains might be, the following observations were made:—

TABLE II.—*Agglutinations Using Three Different Strains of B. Typhosus.*

"Living." Normal sera. 109 observations.

All strains compared were first standardised to give approximately emulsions of equal density of suspension. Thus the cultures used were all of 24 hours. Culture tubes in which the density of growth was uniformly distributed were selected, and normal salt added in quantity proportional to the area covered by the growth. This precaution was

[3] For an admirable discussion of the whole subject the reader is referred to a communication by the late Dr. George Carpenter in the Royal Society of Medicine Transactions, vol. ii., No. 9, July, 1909.

necessary in order to exclude as far as possible differences in agglutination due purely to differences in the density of the emulsions used.

Strain "Douglas."

Dilutions of serum.	Under 2	2	4	8	16	32	64
Frequency	2	18	53	31	5*	0	0

Mean = 5·3, or excluding the fever cases 4·8.

* 3 had a history of long-continued fever.

Strain "Berlin."

Dilutions of serum.	Under 2	2	4	8	16	32	64
Frequency	0	16	30	47	13*	2†	1†

Mean = 7·9, or, excluding fever cases = 6·9.

* No history of fever.

† Had a history of long-continued fever.

Strain "Kral."

Dilutions of serum.	Under 2	2	4	8	16	32	64
Frequency	0	0	0	0	0	1	108†

† Not put up to higher dilutions.

The conclusions to be drawn from these tests are:—

1. There are probably few sera which do not agglutinate B. typhosus at least in a two-fold dilution.

2. Strain "Berlin" gave agglutinations with higher dilutions of sera than strain "Douglas," but nothing much over 16-fold was likely to be frequent.

3. Strain "Kral" was agglutinated with normal sera up to a dilution of 1 in 64 and over. As a matter of fact, this strain agglutinated even with physiological salt solution.

It is obvious, then, that a laboratory finding must vary considerably with the particular strain used, and therefore it is very essential to have a knowledge of the peculiarities of the strain used. It is quite possible, too, that a given strain might in course of time alter as regards its agglutinability with normal sera. Such conditions might be those afforded in the plains of India in the hot weather. Strain "Kral" evidently could not be used in our laboratory agglutination tests, and the choice of a strain lay between "Douglas" and "Berlin."

TABLE III.—*"Douglas" and "Berlin" Strains.*

"Living" emulsion. Showing the agglutinations obtained with the same individual's serum on 30 consecutive days.

Strain "Douglas."

Serum dilutions.	Under 2	2	4	8	16	32	64
Frequency	0	1	28	1	0	0	0

Strain "Berlin."

Serum dilutions.	Under 2	2	4	8	16	32	64
Frequency	2	3	16	8	1	0	0

From these distributions we see that strain "Berlin" varied in its agglutination more than strain "Douglas," even with one and the same individual's serum. I chose strain "Douglas," therefore, for the final test of agglutinability with normal sera.

TABLE IV.—*Strain "Douglas" B. Typhosus.*

Living emulsion; sera of healthy individuals; 500 observations.

Serum dilutions.	Under 2	2	4	8	16	32	64
Frequency	6	92	223	146	29*	4x	0

* 8 gave a history of long-continued fever.
x 4 " " " "

The sera of healthy individuals, therefore, as far as these observations go, do not agglutinate B. typhosus "Douglas" in higher dilutions than 1 in 16, or possibly 1 in 32. The probabilities, accordingly, in favour of a dilution of 1 in 64 being abnormal are likely to be higher than those of its being normal. We cannot, for want of the necessary observations, consider the case of B. paratyphosus as against B. typhosus. These are being carried out.

The question of co-agglutinations or of group reactions has never arisen in the case of M. melitensis, and the problem of differentiation of specific sera from normal sera becomes here comparatively simple.

TABLE V.—*M. Melitensis: Frequency Distribution of Agglutinations.*

Emulsion killed at 60° C. for half an hour. 0·5 per cent. carbolic acid added. 612 observations.

Serum dilutions.	Under 2	2	4	8	16	32	64	128
Frequency	184	349	60	15	2*	1x	1x	0

x Definite clinical histories of having had Mediterranean fever recently.

* No history of fever. One of these two individuals, a laboratory attendant, showed a very high phagocytic count to Mediterranean fever. In this individual, however, the opsonin was thermolabile, as the following experiment shows.

Mediterranean fever serum, ‡ thick emulsion	35·1§	Mediterranean fever serum heated 60° C.–15 minutes— Thick emulsion	26·0§
Serum of laboratory attendant, thick emulsion	21·3§	Thin "	6·3§
Mediterranean fever serum, thin emulsion	4·4§	Serum of laboratory attendant heated 60° C.–15 min.— Thick emulsion	0·3§
Serum of laboratory attendant, thin emulsion	4·3§	Thin "	0·2§

‡ Obtained from a patient suffering from Mediterranean fever.
§ Phagocytic count per leucocyte.

The serum of this laboratory attendant, then, gave a high agglutination and a high phagocytic count, and yet there is no reason from a consideration of its phagocytic action to suppose it other than a normal one.

But before closing this investigation into the agglutinating power of normal sera on B. typhosus and M. melitensis, it will be interesting to give some indication of the degree of agglutination which can be met with in typhoid fever and Mediterranean fever respectively. Instead of taking proved cases of typhoid and Mediterranean fever, I have had to take simply cases sent for investigation and suspected of being typhoid and Mediterranean fever. Only dilutions of 1 in 8 and upwards were used, as it is difficult to get serum for lower dilution from blood capsules sent to the laboratory.

B. Typhosus.

Serum dilutions... ...	8	16	32	64	128	256	512	Mean = 120·2
Frequency	4	6	7	9	11	4	4	

M. Melitensis.

Dilutions	8	16	32	64	128	256	512	1000	2000	3000
Frequency...	0	0	0	2	3	3	0	1	1	1

Remarks.

1. All strains of organisms used for the agglutination reaction should be tested quantitatively as regards agglutinability.

2. The laboratory strain used should be tested against the sera of as large numbers as possible of healthy individuals.

3. The laboratory strain should be tested against the sera of as large numbers of persons known to be suffering from the disease caused by the specific organism, and also of persons suffering from diseases caused by allied organisms, before differentiation between the diseases can be attempted by means of the agglutination test.

My grateful thanks are due to Captain W. F. Harvey, I.M.S., Director, Pasteur Institute of India, for initiating this investigation and for help and advice throughout.

Kasauli.

MEDITERRANEAN FEVER: ITS INFLUENCE ON THE FŒTUS IN UTERO.

BY ROBERT SAMUT, M.B., C.M. EDIN.,

SURGEON-MAJOR, K.O.M.R. OF MILITIA; CHEV. UFF. CROWN OF ITALY; LECTURER ON PHYSIOLOGY, MALTA UNIVERSITY.

THE following case differs from that related by Major E. M. Williams, R.A.M.C., in the July number of the *Journal of the Royal Army Medical Corps* for 1907, inasmuch as the blood of the fœtus gave a positive reaction to Mediterranean fever at birth. The possibility of extra-uterine influence is entirely excluded in this case, since the fœtus was stillborn at the fifth month of gestation.

The patient, aged 17 years, was admitted on Jan. 22nd, 1911, to the Central Hospital, Floriana, suffering from fever of a fortnight's duration. Temperature 103 5° F., tongue furred, anorexia, constipation, pulse frequent, headache, urine normal, spleen enlarged, pregnancy (about five months). Treatment: benzonaphthol and salicylate of quinine. The patient's blood was examined and found to give a positive reaction to the Micrococcus melitensis in a large dilution. On Jan. 28th the patient aborted, and the fœtus was brought to the laboratory for examination, which was performed six hours after abortion.

There was no sign of putrefaction or maceration. The cord was cut, but was fresh and gelatinous. In order that no trace of the mother's blood should remain adherent to the surface of the fœtus its body was washed with soap and water, and then thoroughly rinsed in distilled water The left jugular vein was incised but yielded a mere trace

of blood; the whole of the left side of the neck was then incised, but still the quantity of blood obtained was insufficient for examination. Sufficient quantity of serum was obtained in sterile capillary tubes from the heart cavities, and the agglutination test was performed in various dilutions with an eighth generation culture of Micrococcus melitensis.

Dilution ...	1 : 40	1 : 80	1 : 200	1 : 300	1 : 500
Agglutination ...	Immediate. Complete.	4 min. Complete.	12 min. Complete.	20 min. Complete.	40 min. Slight.

The test was also applied to a small quantity of cerebro-spinal fluid obtained in a sterile capillary tube from the cerebral ventricles, with similar results—viz., a positive reaction with a tenth generation culture of Micrococcus melitensis in a dilution of 1 : 300.

Smear preparations were now made on nutrose-glucose-litmus agar from the spleen pulp, heart muscle, and brain. These were incubated in a Hearson incubator at 37° C. for four days. A growth was noted after 24 hours in the Petri dish over which the brain emulsion had been stroked, and as this could not be the Micrococcus melitensis it was put aside for examination, but was accidentally exposed to contamination and therefore disca ded. The remaining Petri dishes showed no sign of growth after four days' incubation, and none after a further period of three days.

Conclusions.—1. The fœtus in this case had been exposed in utero for 21 days to the influence of those abnormal conditions of the maternal blood consequent upon a severe attack of Mediterranean fever.

2. The child's blood and cerebro-spinal fluid yielded a positive reaction to Micrococcus melitensis in large dilution.

3. The Micrococcus melitensis could not be recovered from the internal organs of the fœtus.

4. Acute infectious diseases are known to be transmitted by the maternal blood to the fœtus in utero, endangering or interrupting pregnancy. Thus cases of intra-uterine variola are by no means rare, while intermittent fever has been known not only to attack the fœtus, but in some instances the attacks have continued after birth, and in all the child had at birth an enlarged spleen (Felkin, Goodell and Harris, Bonfils). There seems to be no reason, therefore, why Mediterranean fever should not be transmitted from mother to child during gestation.

5. The presence of agglutinins alone in the present case raises the important question whether, in the absence of the Micrococcus melitensis in the fœtal organs, they could have been elaborated by the fœtal blood, or whether they were transmitted directly from the maternal to the fœtal circulation.

Sliema, Malta.

ACCIDENTS WHICH HAVE OCCURRED THROUGH COLOUR BLINDNESS.

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.,
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I HAVE written this article because of the continued repetition of the mis-statement that no accident has ever been shown to have occurred through colour blindness.

One of the most extraordinary circumstances in this connexion is the refusal of the authorities to have the eyesight examined of those who are responsible for a collision caused by an error in the interpretation of the coloured signals. I am not aware of a single case in which either the Marine or the Railway Department of the Board of Trade has had the colour perception of an officer responsible for a collision examined, even by the very imperfect methods which are official with them. A man might just as well say that no person had ever died from a very common disease because this disease required for its certain diagnosis a microscopical examination of the blood, and this examination was never made.

I am also precluded from giving those cases in which officers have consulted me because they have found difficulty with coloured lights, and have caused, or nearly caused, an accident. I can with the greatest ease show how dangerous it is to employ colour-blind persons by testing them with my lantern in which the same colours are shown as those in their daily employment. Definite mistakes between the red, green, and white lights are made in a few seconds; and if the examinee be in control of a miniature engine or ship, which he has to direct by the lights, he will soon display his incapacity. I have demonstrated cases of colour-blind men who have passed the official wool test, and shown how they may be made to call green red, and red green, by the proper selection of the colours and their sequence.

Apart, however, from the difficulties which I have just mentioned, there are many cases of accidents which have been proved to be due to the colour-blindness of those in charge. The following is to be found on page 6 of the Annual Report of the Supervising Inspector-General of Steam Vessels to the Secretary of the Treasury, Washington, 1880:—

On the night of July 5th, 1875, there was a collision near Norfolk, Va., between the steam-tug *Lumberman* and the steamship *Isaac Bell*, the former vessel bound to, and the latter from, Norfolk. The accident occurred at about 9 P.M. on an ordinary clear night, under circumstances which, until recently, seemed more or less mysterious. The master of the steamer and all his officers made oath that at the time signals were made to the tug the latter was from one to two points on the steamer's starboard bow, and consequently the steamer's green light only was visible to the approaching vessel. Yet the master of the tug, whose statement was unsupported by any other testimony, asserted that the steamer's red light was exhibited, and he signalled accordingly. The discrepancy in the statements was so great that many persons uncharitably charged the master of the tug with being intoxicated, although no evidence was ever offered in support of the charge. By this accident ten persons lost their lives. Upon a visual examination of this officer under the rules during the past summer—namely, four years after the accident happened, and during which time there had been no question as to his sight—by the surgeon of the marine hospital at Norfolk he was found to be colour-blind, two examinations having been accorded him with an interval of ten days between them.

It is to be particularly noted that the colour blindness was not discovered in this case at the time of the accident, but four years afterwards.

The following is a record of an accident occurring through colour blindness. Mr. Haynes Walton, in a letter published in 1877,[1] says, with regard to acquired colour blindness:—

A few years ago I was investigating colour appreciation, and the first instance of the acquired defect that came to my knowledge was in the person of an engine-driver. This man confessed, after an accident through his not distinguishing the red signal, that he had gradually lost his colour power, which had been perfect; and so sensible was he of his loss and its disadvantages that before the accident he had determined to give up the situation.

The following case is related by Dr. S. T. Armstrong.[2] He says:—

The master and owner of a steamboat on the Mississippi river brought a man to me for examination for colour sense. The man proved to be colour blind and on looking over the records his rejection several years previous was found; the man said he had not expected to pass, and stated that his steamboat had once collided with and sunk a steamboat on account of his inability to distinguish the signal lights. His would-be employer was aware of these facts.

The following case occurred in 1881[3]:—

Colour-blindness, New York, June 18th.—The pilot of the steamer *City of Austria*, which was lost in the harbour of Fernandia, Florida, last April, is proved to be colour blind. In this it would appear that he mistook the buoys, and his mistake cost the owners 200,000 dollars (£40,000). An examination showed that at a distance of more than six feet he could not distingush one colour from another. The physicians attribute the defect to an excessive use of tobacco. The services of the Marine Hospital surgeons were tendered to the local authorities without fee two years ago, but were declined.

The following is related by Dr. Joy Jeffries:—

Dr. Gintl, chief inspector of one of the Austrian roads, got the report of an accident due to colour blindness on the Finnish Road between Helsingfors and Tavastchus in July, 1876. It was caused by a colour-blind switch-tender showing a green instead of a red light to the approaching train.

The following quotations from two letters are very interesting:—

1. I have been on the railway for 30 years, and I can tell you the card tests and the wools are not a bit of good. Why, sir, I had a mate that passed them all, but we had a pitch into another train over it. He couldn't tell a red from a green light at night in a bit of a fog.[4]

2. Some years ago a collision occurred on a railway in consequence of a train over-running a signal; the driver was firm in his statement that the light was "green," whereas all the other men said it was "red." The driver was fined and afterwards continued at work as usual. He then made some other mistakes, which would have ended in collisions had not the fireman said, "Stop, mate." Without any cause being stated the driver decided to give up railway work and take to another occupation.[5]

[1] Times, Jan. 3rd, 1877.
[2] Brit. Med. Jour., Jan. 28th, 1888, p. 188.
[3] Shipping and Mercantile Gazette and Lloyds' List, June 29th, 1881.
[4] Recorded in Invention, Dec. 28th, 1889. An extract from a letter by "Thirty Years Railway Man."
[5] A letter by Mr. Stretton, published in Engineer, Dec. 6th, 1889.

The following is written by Captain Coburn [6]:—

The steamer *Neera* was on a voyage from Liverpool to Alexandria. One night, shortly after passing Gibraltar, at 10.30 P.M., I went on the bridge, which was then in charge of the third officer, a man of about 45 years of age, and who up to that time I had supposed to be a trustworthy officer, and competent in every way. I walked up and down the bridge until about 11 P.M., when the third officer and I almost simultaneously saw a light about two points on the starboard bow. I at once saw it was a green light and knew that no action was called for. To my surprise, the third officer called out to the man at the wheel "Port," which he was about to do, when I countermanded the order and told him to steady his helm, which he did, and we passed the other steamer safely about half a mile apart. I at once asked the third officer why he had ported his helm to a green light on the starboard bow, but he insisted it was a red light which he had first seen. I tried him repeatedly after this, and although he sometimes gave a correct description of the colour of the light, he was as often incorrect, and it was evidently all guesswork. On my return I applied to have him removed from the ship, as he was, in my opinion, quite unfit to have charge of the deck at night, and this application was granted. After this occurrence I always, when taking a strange officer to sea, remained on the bridge with him at night until I had tested his ability to distinguish colours. I cannot imagine anything more dangerous or more likely to lead to fatal accidents than a colour-blind man on a steamer's bridge.

A similar experience is thus related by Captain Heasley of Liverpool:—

After passing through the straits of Gibraltar the second officer, who had charge of the deck, gave the order to port—much to my astonishment, for the lights to be seen about a point on the starboard bow were a masthead and green light; but he maintained that it was a masthead and red, and not until both ships were nearly abreast would he acknowledge his mistake. I may add that during the rest of the voyage I never saw him making the same mistake. As a practical seaman, I consider a great many accidents at sea arise from colour blindness.

The following case is related by Mr. T. H. Bickerton in the *British Medical Journal* of 1887:—

A captain of a large Atlantic steamer, in answer to my inquiry as to whether he had ever come across a colour-blind man, gave me the following information.

One night, while lying in his berth, he heard the officer on watch sing out, "Hard a port!" He at once rushed on deck, and asking the officer what was the matter was answered: "Red light ahead, sir." He looked, and seeing on the starboard bow a green light at once had the helm starboarded. He could not understand how such a mistake could be made as the officer was considered to be an experienced one. On a subsequent occasion a somewhat similar occurrence took place. The order, "Hard a port:" was given, and on the captain hurrying on deck he found that the man had mistaken the pyrotechnic lights by which vessels at night signal the name of the company to which they belong, and which was shown on the starboard side of the advancing vessel for its port light. On each occasion a probable collision was only averted by the prompt intervention of the captain. On the owners of the vessel being informed by the captain of these incidents the man was examined, found to be colour blind, and dismissed.

Mr. Bickerton gives a most convincing example of how an accident may occur through colour blindness, and also of the inadequacy of the official Board of Trade methods. He writes in the *British Medical Journal*, Vol. I., 1900, p. 621:—

In February, 1897, the 4000-ton steamer *D*——, belonging to Liverpool owners, was in the North Sea. The time was night, and the second officer, who had passed for second mate in 1894 and first mate in 1895, was on the bridge. By accident the captain came on deck, and was horrified to find his vessel making straight for an approaching sailing ship. The second officer had seen the approaching craft's green light and mistaking it for a white one, supposing it to be exhibited on some stationary craft, kept his course. A minute or two more and it would have been too late to avert a disaster, and probably the resulting collision would have sent one, if not both, vessels to the bottom. As it was, however, the captain grasped the situation at once and promptly starboarding averted the danger of collision, but not until the two vessels were less than a length apart.

On reaching home the officer was re-tested by the Board of Trade and passed as possessed of normal vision. He went to sea again. He freely confessed that he could never distinguish with certainty a green from a white light.

This and the previous case are even more convincing than those in which accidents occurred, because accidents were only obviated by the prompt action of the captain.

One of the latest is the wreck of the British steamship *Australia* at Port Phillip on the morning of June 20th, 1904. The pilot who caused the accident was subsequently examined and his vision was found to be: right eye 6/36 partly, left eye 6/36 partly.[7] The colour vision, tested by Holmgren's wools, was normal, but tested by luminous discs considerable illumination was required to elicit a satisfactory discrimination of some of the colours. The same pilot was in charge of the ss. *Indraghiri* on March 10th, 1904, when she ran aground to the north-west of the entrance to the South Channel. The night was dark but clear, and the lights were visible. The pilot, however, failed to see the occulting light at No. 15 buoy. It is noteworthy that if the pilot had been examined after the wreck of the *Indraghiri* the wreck of the *Australia* would probably have been prevented.

I have not given those cases of collisions which have occurred on a clear night, and for which no apparent cause was to be found, and of which the lay papers state that it would have been thought that only a madman or a blind man could, in the conditions, have caused an accident. The examples I have given show that colour blindness of the navigating officer is an easy explanation of the mystery.

Willesden Green, N.W.

[6] Mercantile Marine Reporter, vol. xiv., No. 162.
[7] Barrett and Orr, THE LANCET, Oct. 29th, 1904, p. 1202.

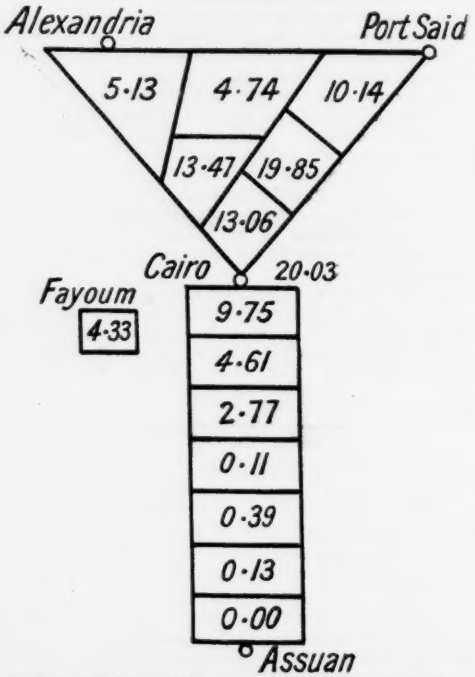
NOTES ON BILHARZIOSIS AND ANKYLOSTOMIASIS IN EGYPT.

BY G. W. G. HUGHES, M.R.C.S. ENG., L.R.C.P. LOND.,
CAPTAIN, R.A.M.C.

Bilharziosis.

IN the Records of the Egyptian Government School of Medicine for 1904 are some interesting notes by Mr. Frank Milton on cases treated at the hospital and found to be suffering from bilharziosis. He tabulated them according to the provinces from which they came, working out the number of cases per 100,000 of population of each province. I have shown these figures in a diagram (1), giving roughly

DIAGRAM 1.



Bilharziosis (Milton, 1904): Compiled from cases admitted to Kasr-el-Ainy Hospital, Cairo. Figures represent proportion of cases per 100,000 of population of each province. *Note.*—Cairo: Probably most of these cases came from the provinces originally.

the geographical position of the provinces, the triangular portion representing the Delta, with Cairo at its apex; the elongated portion the long, narrow valley of the Nile of Upper Egypt, with the Oasis of the Fayoum on the west. Mr. Milton says:—

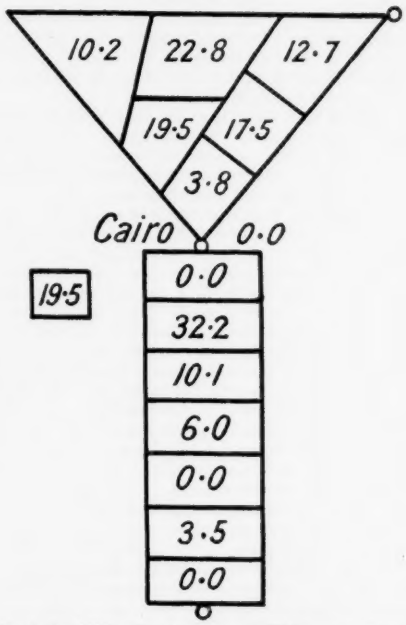
The disproportion between the number of cases of bilharzia from the two natural divisions of the country is so very marked that there must be some very well defined cause constantly acting, and this, I believe, is to be found in the way in which water is supplied to the different provinces for the purposes of irrigation. ..... Thus the peasant from Lower Egypt has a much longer period of time during which he is exposed to the chance of infection, and infection is more frequently repeated than is the case with his brother in Upper Egypt.

The difference in the water-supply referred to is that in Lower Egypt (the Delta) the land is watered perennially,

whereas in most of Upper Egypt "basin irrigation" is employed, and the land is dry for many months in the year.

The Egyptian army is a conscripted army, and the recruits are examined and selected by medical officers in the various provinces, and the required numbers are sent to Cairo, where they are again medically examined. Part of this second examination is a microscopic examination of the urine. The men sent to Cairo are all apparently healthy and strong, but as many as 7·5 per cent. of these are found to have bilharzia ova in the urine. Out of 1516 found fit in the provinces, 115 were found to have bilharziosis. In the second diagram I

DIAGRAM 2.



Bilharziosis (1910): Percentages of 1516 men apparently healthy and fit for the army and found to have bilharzia in urine.

have distributed them according to the districts from which they came, to compare with the first, but the numbers are really too small to give an accurate idea of the distribution. It must be remembered that these are young men of 21 years of age.

Ankylostomiasis.

One of the most striking results of ankylostomiasis in the young is the stunting of growth. When the young men of Egypt are called up at 19 years of age to be balloted, two classes are at once rejected—(1) those who are blind in one eye or in both, or are deformed or maimed; and (2) those who are under 155 cm. (5 ft. 1 in.) in height. I wish to draw attention to this second class.

The average height of these "short men" is about 150 cm. (4 ft. 11 in.), and it is found that though a very small number of them may be really under age and others are normally undersized, the great majority are suffering from obvious anæmia, or show evidences of having suffered from it. Not only undersized, but with childish voices and genitals, one would gauge their age at 12 or 14 rather than at 19 years.

The numbers of these unfortunate boys give a very good idea of the extent of the ravages of ankylostomiasis among the male population in Egypt. In the third diagram the figures represent the percentage of youths rejected as being under 155 cm. As in the diagrams for bilharzia, the Delta shows a far greater prevalence, the figures becoming lower towards the south. Another noticeable point is the comparison between the large towns of Cairo and Alexandria and the rest of the country.

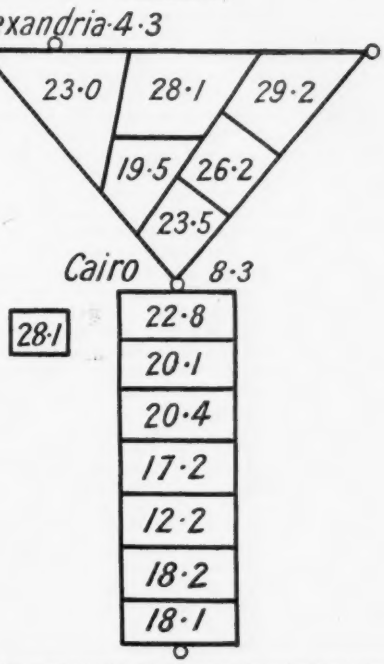
These figures do not represent, of course, the full numbers of men who have this "Egyptian chlorosis," far less of those who harbour the ankylostoma. If they represent anything, they only give an idea of the number of those who have suffered so severely from the disease between the ages of about 10 to 16 years that their growth has become stunted.

Remarks.

Are not the figures rather appalling? It is impossible not to be impressed by the shocking waste of life and waste of labour caused by these diseases. The huge percentage of eye diseases is more obvious, but not more serious. As regards eye diseases, it is pleasant to note that the educative influence of the travelling eye hospitals inaugurated by Sir E. Cassel is bearing fruit, and that in many of the principal towns permanent eye hospitals are being erected by public subscription.

But can nothing be done for ankylostomiasis and bilharziosis? Nothing at all is being done at present. Prophylaxis seems almost impossible, or at any rate so large and so difficult a task that one cannot blame the already over-worked and under-staffed public health authorities for their inaction. Could not the idea of a travelling eye hospital be utilised? Apart from the actual relief such a hospital gives to its patients, the *educative influence*, already

DIAGRAM 3



Ankylostomiasis (1909): Percentages of youths found under 155 cm. when 19 years of age.

referred to, is most important. Treatment by anthelmintics might be given free in every town where there is a government hospital. Thymol, however, is not a drug which it is advisable to sell wholesale without medical supervision, as quinine is sold to the public at post offices in India. But I am not sanguine enough to believe that the native in the country can be persuaded, or taught, or induced, within many generations, to observe European ideas of cleanliness. He works in mud, his house is of mud, and his habits are filthy.

Cairo.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.—An examination will be held at St. Bartholomew's Hospital on Sept. 25th and following days, on the results of which the scholarships enumerated in the Students' Number of THE LANCET (August 26th, 1911, p. 571) will be awarded. The successful candidate in each case will be required to enter for the full course as a student at St. Bartholomew's Medical School immediately after the examination.

X RAY TREATMENT OF SARCOMA:

A CASE OF ROUND-CELLED SARCOMA OF THE RIGHT ANGLE OF THE LOWER JAW IN WHICH COLOSSAL DOSES OF X RAYS PROVED EFFECTIVE.

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THE following case may prove useful in marking out a new line in the use of X rays therapeutically.

The patient, a boy, aged 4 years, was brought to the Royal Devon and Exeter Hospital for a small swelling over the ascending ramus of the jaw on the right side. As he had at the time a catarrhal condition of the auditory meatus on both sides, the swelling was thought to be glandular, and the ears were thoroughly treated until the discharge ceased. During the next month the swelling became much larger, the whole bone on that side appearing implicated and the enlargement being now noticeable both inside the mouth and externally. A fortnight later the swelling had increased in size and a point of softening was noticed on the inside. At this time (June 25th, 1910) the case was admitted.

On admission the patient was drowsy and took very little notice. The temperature ranged between 98° and 100° F., rising on July 4th to 103·4° in the evening. On July 5th, under chloroform anæsthesia, an exploratory puncture in the mouth was made, and some soft material was removed for microscopical examination. Some slight gouging and examination with a probe was made in order to ascertain whether tubercular disease of the bone existed. No evidence of this was obtained. On July 11th the pathologist reported: "The growth proved to be small round-celled sarcoma."

After the operation the patient became more drowsy than before, the skin over the tumour becoming reddened and softened as though about to break down. The temperature ranged between 101° and 104°. Inside the mouth the condition was that the swelling was so situated that the teeth could not be made to touch, and mastication of food was prevented, the teeth chewing the tumour and causing a line of ulceration. Coley's fluid was now injected: July 15th, ♏ ½ was given; 16th, ♏ ¾; 17th, ♏ ⅞; 18th to 20th, ♏ ½; 22nd, ♏ ¾; 23rd and 24th, ♏ 1⅛; 25th, ♏ 1⅜; July 26th to August 3rd, ♏ 1½. After the injections, which were given in the forenoon, the patient usually had an evening reactionary temperature of 101° to 102°, the temperature becoming normal in the morning. As a result of nearly three weeks injections, the swelling was noted as being "much smaller, the skin becoming normal in appearance, and the general condition much improved. The fluid was sometimes injected into the tumour, at other times into the arm."

On persevering with this treatment it was noted that reaction was still obtained on August 20th, but on Sept. 9th, although ♏ iv. were given as one dose, no reaction was obtainable. The case being now in a latent condition and no further benefit appearing, on Sept. 18th, 1910, what must be called a colossal dose of X rays was given, since the word massive has already been used for far smaller doses. The child was prepared for the ordeal by being given a mixture of bromide and chloral in small doses during the day. A regenerating X ray tube (sparking from mica type) in good condition being selected, a glass shield and cylinder were used to protect other parts of the face, and to maintain the proper Sabouraud distance; an aluminium filter was used about half a millimetre in thickness; and the tube was illuminated with a 100 volt current, so arranged that 5 ampères passed through the primary of the induction coil. This on being measured gave a good Sabouraud dose in rather less than 20 minutes. This current was maintained for six continuous hours, from 6 to 12 P.M., with a short interval at 9 P.M. to soften the tube. This was made up later.

The house surgeon's notes run: "On next day the side of the face was very red, and later some inflammation of right tonsillar region. The temperature rose gradually for three days (Sept. 19th to 21st) from normal to 103·6°, but remained normal on Sept. 25th. There is a very definite recession in the apparent size of the growth. The outline of the jaw can be felt on all sides of the tumour. The ulcerated surface inside the mouth was quite healed on Sept. 25th."

On Sept. 28th a second dose of the same length of time and quantity was administered, being the fourth day of normal temperature. The house surgeon's note runs: "Tumour now feels about the size of a hen's egg and quite hard, arising abruptly from the inferior maxilla. No egg-shell crackling obtained."

On Nov. 9th my own notes run: "The condition now is that all soft parts of the tumour are more or less absorbed, and hence the projection into the mouth, and also on the cheek, is much reduced. The boy can chew and shut his mouth and open it widely. The bony condition is, however, one of considerable expansion still, but harder as though condensing. His general condition is much improved, and he is now lively and boyish. Seen from the foot of his bed, the two cheeks are not dissimilar." On Oct. 29th, and again on Nov. 26th, the same dose was repeated, being four colossal doses of 18 Sabouraud doses each.

I have omitted to state that on August 25th and twice a week after, for five times in all, the patient was given single Sabouraud doses during the administration of Coley's fluid. It was the failure of this treatment and that of Coley's fluid that induced me to try such large doses.

The child was now much improved in appearance and had put on many pounds weight. His parent desired to have him home, and he was made an out-patient. Owing to domestic circumstances his treatment was discontinued in December, but on Jan. 14th, 1911, another colossal dose was administered, there being a small lump palpable under a good layer of fat, for he was now fairly "chubby." He did well, and was regarded by his relatives as cured, and was allowed to play in the public grounds with other children.

In the month of May he was brought with the history of being knocked on the jaw by another boy whilst playing. On examination the tumour was much swollen out, and the teeth were kept apart by growth in the mouth as at first. It was hoped the great enlargement might be hæmorrhagic, and cooling lotions were at first applied. Later one colossal dose was given on May 13th, but no marked result followed, and finding that he was likely to sink shortly the mother removed him to her home to die there rather than in hospital. Thus the case ended untowardly, although there seemed every hope at one time that the daring treatment might prove permanently successful.

I have not read or heard of so large a dose being given, but I was driven to it by the hopelessness of the case in one so young, and the fact that radium treatment lends itself to prolonged sittings; for whilst radium rays are not X rays nor serve the same purpose, yet there is a similarity. I was also influenced by an expression I saw in the *Archives of the Roentgen Ray*, in which it was stated that "a good kick sometimes does more good than several slight pushes."

I believe there is a future for this form of treatment, and I have another case of cancer of the jaw undergoing similar treatment. Should others wish to try such colossal doses I wish to urge them to regulate their coils not to exceed in quickness 17 minutes to the Sabouraud dose, to filter with aluminium, and to take the temperature night and morning. One of my difficulties lay with the toxins which were liberated. Unless the temperature does rise no great good seems to occur, but it must be normal when the next colossal dose is given.

I think Coley's fluid did good at first, but the boy soon grew immune to it, and on reaction failing to occur no further benefit ensued. It is noteworthy that single Sabouraud doses given during the treatment by Coley's fluid produced no marked reaction. It seems improbable, then, that the reaction following the first colossal dose was in any way due to Coley's fluid, and none had been given for 12 days prior.

It seems clear that X rays are capable of producing necrotic changes of the cells, by which certain products are liberated which can be taken away by the lymph channels; these, on finding their way into the general circulation, set up febrile action, as large doses of tuberculin used to. It is for us to find out how much of this toxin the individual patient can contend with, and how large a dose of X rays is necessary to liberate the required amount in such cases as prove themselves amenable to this form of treatment.[1] I

[1] The thickness of aluminium used in this case was determined by our engineer as gauge 24.

wish to acknowledge the care shown by our then house surgeon—Mr. Vernon Starr—in keeping so clear a record of this important case, and also by Sister Hussey of the electrical department in carrying out so conscientiously the long sittings.

Exeter.

NOTE ON A CASE OF ACUTE PLASTIC IRITIS, MARKEDLY BENEFITED WITH ANTISTREPTOCOCCUS SERUM.

BY A. A. BRADBURNE, F.R.C.S. EDIN.,
OPHTHALMIC SURGEON TO THE ORMSKIRK HOSPITAL AND DISPENSARY, AND TO THE SOUTHPORT EDUCATIONAL AUTHORITY.

ON April 11th, 1911, I was asked to see, in consultation, a patient, aged 46 years, who for three or four days had been suffering from very acute pains in his legs, back, and chest. The previous day unmistakeable evidence of pleurisy had been found, and so severe had the pains been that four injections of morphine had been given in 24 hours.

I found the patient in bed, looking flushed and anxious. There was intense hyperæmia of the ocular and palpebral conjunctiva of the left eye. The cornea was so hazy as to almost occlude the iris, which could be dimly discerned lying attached to the lens capsule, causing naturally a very deep anterior chamber and a contracted pupil. Vision was reduced to light perception. The ocular movements were normal, the tension was high, but there was no tenderness to pressure. The right eye was normal.

Salicylates and potassium iodide had been given previous to my visit with the idea of combating what looked like an attack of rheumatism. Examination of the patient's teeth revealed the presence of suppuration around the roots, and this feature led us to come to the conclusion that the condition was due to a staphylococcal or streptococcal toxæmia. To settle this point a sample of his blood was taken and sent to Dr. A. Ramsbottom of Manchester. Meanwhile the iodide was stopped, and the dose of the salicylates increased to 20 gr. every four hours. Local treatment to the eye consisted of fomentations and drops containing dionine, atropine, and cocaine.

The patient passed a very good night, quite free from pain, but on his medical attendant visiting him next morning he found the right eye starting a similar but less intense attack, for which he promptly instilled a weak solution of belladonna. On my seeing him I found that the mydriatic in the right eye had dilated the pupil, leaving in the centre of the pupil a deposit of lymph. Atropine was immediately instilled, but only very little further dilation could be obtained, and again it left another ring of exudation on the lens capsule. The condition of the left eye was practically unchanged. In neither eye could any deposits of lymph (keratitis punctata) be made out.

The patient was removed to a nursing home. During the next 24 hours the atropine drops were continued, but the only result was to produce a peculiar tucking up of the pupillary margin of the iris. On the third day a report was received that the examination of the blood confirmed the view that the condition was streptococcal in origin, and upon this it was decided to inoculate with antistreptococcus serum. At 1 P.M. an injection of 10 c.c. of Messrs. Parke, Davis, and Co.'s antistreptococcus serum (polyvalent) was given. At 3 P.M. the temperature went up to 99° F., and the patient complained of itching of his left eye. At 7 P.M. the eye became more injected. This evidence of local reaction was particularly pleasing, and when he was seen next morning it was found that the deposit of lymph on the lens of the right eye had completely gone, and the liquefaction of the exudation had enabled the atropine to start dilation of the pupils. At the same time the texture of the iris became evident, its markings having previously been obscured by the lymph.

No medicine had been given since the injection. The patient was free from pain and had slept well, and was apparently perfectly comfortable and much brighter since he found his vision so improved. Forty-eight hours after the injection the right pupil became fully dilated and the left to three-quarters. In the left eye a curious condition was to be seen. Extending from the cornea to the anterior surface of the lens was a cone-shaped solid semi-transparent mass, bearing a striking likeness to a lump of camphor. Its broad expanded base was attached to the posterior surface of the cornea; its apex, resting on the lens capsule, corresponded to the size of the originally contracted pupil. As matters progressed this mass rapidly melted away, and in four days all that was left was a centrally situated nodule, surrounded by a series of concentric rings slightly coloured with iris pigment.

A second sample of blood had been submitted, and the report stated that there was undoubted evidence of streptococcal infection, and advised a second injection. This was accordingly done, but it caused a rise of temperature and upset the patient generally, without producing any particular benefit. The patient remained in the home for three weeks, and had all his teeth removed, the majority of which were found to be the seat of alveolar suppuration at their roots. A scraping taken from the root of one failed to grow any micro-organism whatever. I saw him finally on May 23rd and could find but very little trace of the recent trouble. The pupils were equal and active, there was not the merest spot to be found anywhere on the lens capsule or cornea of either eye. There was, however, some vitreous haze in the right eye, close behind, if not on, the posterior surface of the lens at its nasal side, and in the left all over the posterior pole, but in both eyes it was little more than a veil.

Since this case came under my notice I have received Darier's latest work, "Ophthalmic Therapeutics," and in it he makes the following statements:—

> The anti-diphtheritic serum is the only specific serum that has been recognised in ocular therapeutics. ..... At present we possess few sera the action of which is really specific. Meanwhile, ought we not to find out whether certain serums do not possess, in addition to their purely specific action, therapeutic properties that may be utilised in infections of a less serious nature or that have some analogy with the specific infections.

This case seems to show that certain antitoxic serums, even if they do not possess specific action, have marked therapeutic properties of liquefying and aiding absorption of the exuded lymph. Whether the good results were in any way due to the previous use of salicylates or not this one case cannot prove. It, however, proves the utility of antitoxic sera, as without it the case could scarcely have made such rapid and astonishing progress. Another question which seems of interest is whether the case was really one of the manifestations of so-called rheumatism of streptococcal nature. The fact that the salicylates relieved the intense pain seems to support this idea. One would be glad to have the views of bacteriologists and others on this case.

Manchester.

A CASE OF SYPHILITIC NECROSIS OF THE CERVICAL VERTEBRÆ.

BY F. X. J. CALLAGHAN, M.B., B.CH., D.P.H. R.U.I.,
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THE patient, a female aged 23 years, was admitted to hospital on August 17th, 1910. In 1906 she had contracted syphilis. The primary infection was very marked, so much so that portions of the vulval and vaginal mucous membranes were destroyed. Three months later she had suffered from sore-throat and a "spotty red rash." She was not medically treated for either the primary or secondary symptoms. In June, 1909, the patient was treated in the out-patient department of Jervis-street Hospital, Dublin, by Mr. J. L. Keegan for an ulcer on the right side of the neck. The ulcer had healed readily under antisyphilitic treatment. In June, 1910, the patient began to suffer from pain in the neck and from difficulty in swallowing; she was treated for this condition in another hospital and obtained some temporary relief from an operation performed on her throat (the throat was approached from the side of the neck, not through the mouth). On August 17th she was admitted to Jervis Street Hospital by Mr. Keegan, who kindly placed her under my care.

On admission the temperature was 101° F., the pulse-rate 130, and the respirations were 30. The patient complained of severe pain in the head and the neck. The pain was relieved by supporting the head on the hands, and was intensified by movement. The head was held thrust forward, the chin being directed slightly upwards. There were extreme rigidity of the neck and tonic contraction of the sterno-mastoid muscles, the cervical glands were enlarged on both sides, there was marked tenderness on pressure over the

upper cervical vertebræ, and the pupils were obstinately contracted. The patient complained also of pain and difficulty in swallowing. I was unable to examine the condition of the throat, as the attempt to open her mouth at all widely caused her extreme pain. Except for rigidity of the arms, I found no other signs of irritation or compression of the cord or nerves. The heart and lungs were normal. The symptoms pointed to pressure on the cervical portion of the cord, and a diagnosis of gumma pressing on this portion of the cord was made. The patient was given 10-grain doses of potassium iodide with 1/16th grain of perchloride of mercury three times daily, and was kept as quiet as possible. Though unable to swallow solids, she could swallow fluids in small quantities. On August 19th the patient stated that she felt something sticking in her throat, "something which felt like a piece of bone." The throat, however, could not be examined owing to the extreme pain which the necessary manipulations caused. Later in the day the patient coughed up a large piece of bone, which on examination proved to be the greater portion of the body of one of the cervical vertebræ (probably the third), the upper and lower anterior borders and the upper articular surface of the body being plainly shown on the fragment. Another fragment, apparently a

Reproduction of a photograph of necrosed fragments of cervical vertebræ.

portion of the body of the second, was coughed up some hours later. From this date the patient improved rapidly. The pain and difficulty in swallowing disappeared, but the rigidity of the neck persisted to such a degree as to suggest ankylosis of several cervical vertebræ. She was allowed to get up in ten days' time and when last seen (November, 1910) presented no abnormal sign or symptom beyond the cervical rigidity. She now wears a metal support for the chin and occiput attached to a jury-mast, and is thus protected from the disastrous consequences which would ensue were her neck suddenly bent forwards; the support also removes some of the weight from the weakened vertebræ.

The measurements of the larger fragment were as follows: Greatest transverse diameter, 2·1 cm.; vertical diameter, 1·3 cm.; and antero-posterior diameter, 1 cm.

The case was apparently one of syphilitic necrosis of a portion of the cervical vertebræ, followed by the formation of a sequestrum which was subsequently extruded through the posterior pharyngeal wall and so coughed up. I think the rigidity which is now present is due to the formation of new bone welding together the bodies of the upper cervical vertebræ.

Reference to the literature of the subject shows that syphilitic necrosis of the vertebræ is a rather rare condition; it usually affects the upper cervical vertebræ and begins in the anterior portion of the bodies. It starts as a periostitis which is followed by death of a portion of bone; a rarefying osteitis now takes place at the junction of dead and living bone, and so a sequestrum is formed. Subsequently the periosteum may form new bone.

As to the diagnosis, syphilitic necrosis may give rise to all the clinical features of tuberculous caries, but the onset in the former is more sudden and the progress more rapid. In most cases valuable information is obtained from the history of the patient, the presence of other evidences of syphilis, and by noting the effect of antisyphilitic treatment.

I wish to thank Mr. Keegan, surgeon to the hospital, for kindly allowing me to publish this case.

Dublin.

PORTAL PYÆMIA AND HÆMORRHOIDS.[1]

BY DAVID A. ALEXANDER, M.B., CH.B. VICT.

THE subject of the following account, a master workman, was at the time to which it refers (February, 1910) in appearance and form in the prime of physical manhood. The family to which he belonged, a numerous one and widely scattered, exemplifies in its various branches the usual morbid diatheses. One of his children is distinctly oxycephalic. In himself the only constitutional peculiarity to be noted was blanching or empurpling of the fingers and hands—that local asphyxiation which culminates in Raynaud's disease. I had previously attended him in September and in November, 1909, for attacks of which he had had a succession during recent years. With sudden abdominal pain in the right lumbar and iliac regions, tenderness, nausea, and dysuria, they suggested to me the passage of a renal calculus, being similar to those in another patient whom I was simultaneously attending, and in whom, without the confirmatory proofs of blood in the urine or the testicular direction of the pain, the symptoms at last abated with the expulsion of several small stones. There was no rise of temperature that I discovered during these attacks; they did not last long; the patient kept his bed for a day or two, and then resumed work.

On Feb. 16th, 1910, when I saw him, he had been seized with pain in the night on the right side of the abdomen as before, but there was now an area of tenderness and resistance in the appendicular region, and he had a temperature of 100° F. On the third day these symptoms were subsiding. But the patient did not, as on former occasions, quickly recover himself; he kept his bed, with an air of weariness, which left a misgiving as to his real condition. On the 21st a gangrenous odour was perceptible, which investigation showed to be due to a sloughing hæmorrhoid. The patient then stated that he had long been subject to piles, and that they had occasioned him no small inconvenience. The pile occupied the right side of the anal ring, was as large as an almond, and had prolapsed from within. It quickly sloughed off, leaving a tender area within the anus. There now appeared no reason to expect a delay in convalescence; there was no abdominal pain or tenderness. Temperature was absent, the pulse was steady, and the patient was quiet. I did not think him morbidly apathetic. Shortly, however, an icteric tinge was visible in the eye and skin, and bile appeared in the urine. The patient's wife also reported that he had had "shakings" in the night, the significance of which statement I overlooked and regarded the jaundice without apprehension. On the 26th, ten days after the onset of illness, going in at 9 A.M. I witnessed a rigor. It was impressive in its severity. The patient became deeply cyanosed; his teeth chattered; he shook; the bed shook; his temperature rose to 105·5°, the pulse-rate to 120; he was in great distress for 15 minutes, then began to perspire, and regained composure, but was much exhausted.

At this juncture he was seen with me by Mr. T. Carwardine. It was clear that we had to do with a virulent infection the seat of which was to be located or removed. Looking over the past history, it was very doubtful whether the earlier attacks were renal. So far, only bile had been found in the urine. The local signs of appendicular mischief were not in evidence, some pain only being elicited by deep pressure in the right loin. There was a little flatulent distension of the abdomen, but no hepatic tenderness or increase of dulness or splenic enlargement. Of typhoid infection, recent or remote, there was no proof. The breath had an acetous odour. There remained the anal area and the site of the sloughed pile. Here the canal was found to be still tender to the touch, bleeding slightly. The rectum, considerably ballooned, presented on the right side some resistance to the examining finger as though the walls were thickened. Nothing comparable to an abscess sac was encountered. It seemed reasonable to consider the anus as the site of infection, to attribute the pain to phlebitis in the portal veins, and in the icterus to see proof that the liver was already invaded. This was not a condition for operative intervention and only

[1] A paper read at a meeting of the Bristol Medico-Chirurgical Society.

the gravest prognosis could be offered. The patient was removed to a nursing home for greater care or possible emergencies.

Day now succeeded day without diminution in the recurrence or the violence of the rigors. The whole picture of the disease was one seldom to be seen outside tropical clinics, composure and apparent safety suddenly changing to danger and distress. In a fortnight the patient was much wasted; the feet and legs were œdematous, abrasions appeared at bony prominences, here and there were minute ecchymoses, and small subcuticular abscesses began to form.

In March the crural veins of the right leg became thrombosed, signified by increased swelling and persistent pain. Meanwhile the local condition of the anal canal had improved. No collection of pus could be detected in the rectum, although a little was now and then apparent in the motions. The urine now began to run clear of bile, the rigors to cease, and the daily range of temperature to fall. By the middle of April, however, the puise began to flag, concomitantly with the discovery in the abdomen of free fluid and another rise in temperature. After eight weeks of a septic state, therefore, sometimes expressing itself in a hyperpyrexia of 107° and with the complications already seen, little ground of hope remained.

Rallying again, the patient passed another fortnight without increase of abdominal fluid, with recovery of heart force, freer urinary flow, and declining temperature, and in this condition he returned to his own house.

In May increasing pain and localised tenderness of the right calf pointed to abscess formation, and on the 21st, under local anæsthesia, an incision was made and about a pint of foul greenish pus was evacuated. Continual irrigation followed until, in three weeks, healing was complete.

A favourable course now seemed to open, but it was interrupted towards the middle of June. Gastric discomfort was complained of and dyspnœa; the temperature, reduced almost to the normal, again showed an ascent, and these symptoms were associated with extension from the flanks and rapid increase of ascitic fluid. Large veins appeared in the hypogastrium, the whole abdomen was distended, and the parietes were œdematous. This condition was relieved on June 27th by the insertion of a trocar and with the escape of some quarts of clear fluid. Thenceforth ascites was controlled by diuretics and purgatives; cutaneous œdema lingered for a while only and the enlarged veins ceased to be visible. Convalescence followed, and a visit to the country was possible in August.

In October an attack of two days' duration recurred similar to those of the preceding year, with pain of the same distribution and with a slight rise in temperature. In the time which has since elapsed the patient has regained his former weight and vigour, and maintains them, complaining neither of pain nor hæmorrhoids.

It will now be asked what the bacteriology of the infection was and what it contributed to treatment. First, of the urine: it yielded nothing; there were neither tubercle bacilli, as evidence of chronic tuberculosis, nor colon bacilli. Blood drawn from a vein on March 3rd, when the rigors were frequent, proved also to be sterile. It showed a moderate leucocytosis. The subcuticular abscesses were not investigated, being abraded almost as soon as formed and prone as they were to surface contamination. When the crural abscess was emptied in May it yielded a streptococcus brevis, and provided to Professor I. Walker Hall the means for an autogenous vaccine. One administration, indeed, of polyvalent serum had been made in the early days of the infection, but it happened that afterwards the patient was more than usually prostrate, and no second dose was given. So with a vaccine; there was no encouragement to continue what might not be a specific at all. When at last the autogenous vaccine was in our hands the time for its value to be proved had passed. With the crural abscess the septic process had come to an end; the abdominal distress, ascites and anasarca, as it turned out, depended on no fresh focus of infection, but rather was a mechanical result of portal obstruction, and I hesitated to use it.

A few observations may be made upon the course and incidents of the illness. The patient was a good patient; he took gratefully all the care shown him and the comfort he derived from assiduous nursing. He was content, not to say cheerful, even when, as his weakness deepened, he ceased to expect his restoration. He slept much; was often delirious, too, and required a sedative. His appetite was always better than his alimentation; he wanted common food, even whilst his motions were large and fetid or tympanites was calling for turpentine enemata. He took much milk, and of brandy some four to six ounces daily when at the worst. Intestinal antiseptics (excepting iodoform suppositories) were not given continuously. Utropine was early discontinued. Strychnine was frequently required, especially after the severer rigors. Quinine was given at the beginning in 5-grain doses. From perchloride of iron, in large doses, I believe he derived advantage, and perhaps also later on from the sulphates of iron and magnesium.

The temperature charts presented a fair conspectus of the case. Evening rise and morning fall were not quite regular during the first month, and the constancy of the temperature was then further broken by the recurring seizures. Of these some 30, the greater number, were crowded into 13 days. The daily range at this time lay between 98° and 104°, exceptionally exceeding the latter, as on March 3rd, when 106·6° was recorded with and also without a rigor. In the first half of April the reading was 98° to 100°. Irregularity and perceptible rise accompanied the appearance of ascites and cardiac feebleness of that time. In the middle of May pyrexia was only slight, until the crural abscess pressed for relief, when 100° was again reached. And the same rise from an almost normal was repeated at the end of June when the trunk was dropsical. The pulse record 80, 96, 120, 130, followed remission or exacerbation of other symptoms.

Reviewing the whole case, I think it probable that all the previous seizures were of the nature of the last: in the former a limited tract of the hæmorrhoidal veins being thrombosed; in the latter, extension having taken place, there resulted, what must be rare in the experience of any—portal pyæmia as a complication of hæmorrhoids. There may remain a lingering doubt whether, in his present seeming perfect health, the patient has lost the disposition to reinfection—a doubt which qualifies one's satisfaction at his recovery.

Clifton.

THE PREVALENCE OF PULMONARY TUBERCULOSIS IN THE MERCHANT SERVICE.

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THERE is a widespread belief that a seafaring life is one of the most effectual remedies in the treatment of those who suffer from "weak chest," and no doubt to a certain extent and under favourable conditions this is true. Life at sea would naturally appeal to the lay mind as an ideal one for people in indifferent health, and especially for those with any tubercular tendencies, in that the open-air treatment is to be obtained here in its truest and most economical form. But when one inquires into the circumstances under which the sailor lives on the sea there are many fallacies intimately connected with this belief, and the benefit derived is in many cases meagre compared with the disadvantages and even danger closely associated with such a life. Not only is tuberculosis a very prevalent disease among sailors, as I shall try to show in this paper, but also cardio-vascular diseases and their effects are extremely common. The latter, however, are rightly attributed more to hard work, alcohol, and syphilis—a trio still closely connected with the sailor—than to inefficient accommodation and ventilation. I shall confine my remarks, therefore, to the influence of the latter defects on the incidence of pulmonary tuberculosis among the sailors.

To the patient who is already affected with pulmonary tuberculosis, and who can afford time and expense, a long sea voyage is still recommended as one of the best means of overcoming the effects of the tubercle bacillus. Undoubtedly in many cases much benefit is derived, and better results still would be expected in accordance with the present-day idea of treating tuberculosis if certain facts were taken into consideration. First, cases should be selected, and only those in which the disease is in its early stages and not rapidly advancing should be recommended for a prolonged sea

voyage with any prospects of permanent benefit. Secondly, variations in temperature and climate ought to be taken into consideration. Long periods of bad weather, with frequent and sudden changes of temperature, produce very deleterious effects on patients suffering from diseased lungs. During these periods the patient is confined to his cabin, where more often than not the accommodation provided is very unsuitable and the conditions under which he lives, as far as ventilation and supply of pure air are concerned, are for the time being worse than they would be at his own home on land. Hence it is not surprising to find that many patients do not gain any material benefit from the treatment, and this no doubt accounts to a large extent for the disrepute into which it has of late years fallen.

It might be expected, however, that the sailor who presumably commenced his seafaring life in good health would maintain perfect health, and of all people would be the least liable to contract tuberculosis. In the merchant service, from which the statistics given in this paper are derived, such is not the case. The prevalence of the disease is marked and the suffering produced enormous. No better proof could be required of the infectious nature of pulmonary tuberculosis than that supplied by the frequency of that disease among the sailors, the vast majority of whom have no hereditary tendencies to that disease, but, on the contrary, are physically of such build and good development as to preclude any suspicion of that taint. When, however, a single member of a crew suffers from tuberculosis he becomes a grave danger to all the others. The insufficiency of the cubic space provided, the lack of proper ventilation and aeration, especially in cold weather, in addition to the want of sufficient sunlight—all these deficiencies aid in an unmistakable way the growth and dissemination of the tubercle bacilli. The increase of temperature below decks, especially in the engine-rooms and stoke, helps to dry the expectoration which is spat indiscriminately in all parts of the ship visited by the infected person. This dried sputum is constantly blown about by currents of air, is inhaled by others, or may be deposited on food or in drink exposed to the atmosphere. Fortunately, however, in the healthy and strongest members of the crew the tubercle bacilli, even if inhaled in the manner described, do not find a favourable medium for their growth and development, and the individual maintains good health owing mainly to his own powers of resistance. There are others, again, who from the nature of their ratings are less favourably disposed. Firemen, engineers, greasers, cooks, and stewards pass most of their time below deck in stuffy atmospheres, in ill-ventilated, dark, and dusty rooms, with the too frequent result that in the course of time anæmia is produced, health deteriorates, and they readily become a prey to the tubercle bacillus. Additional factors, such as the abuse of alcohol, venereal diseases, irregularities in diet and sleep, are all most potent causes of the debility and deterioration in health which precede and increase the susceptibility to pulmonary tuberculosis.

At the Dreadnought Hospital merchant seamen of all nationalities are admitted and treated. A special department of the hospital is set aside solely for tuberculosis, and open-air treatment is adopted in such cases as are definitely diagnosed as tuberculosis. Under this treatment, combined with as much nourishment as the patient can possibly consume, the results are good in many of the cases. After a stay varying from a few weeks to many months some of the patients gain vastly in strength and weight, and the disease appears for the time being to be quiescent. This, however, only holds good in those cases in which the disease is at its earliest stages. In others more advanced improvement is only temporary, and eventually a time comes when the patient begins to dislike his food; he gradually loses weight and strength, and the temperature gets more hectic in type until he dies. Patients of the former class, in the course of a few weeks or so, improve to a certain extent, and insist on leaving the hospital, under the impression that they are quite well again, or, at all events, that they are sufficiently recovered to resume their usual employment. The majority of these patients, however, after varying periods of absence in comparatively good health, eventually return to the hospital in worse condition than when they were previously admitted. These are the cases which are a source of great danger, in that they disseminate the disease, and not only make matters worse for themselves but infect their fellow shipmates, and thus, as it were, complete the life cycle of the disease.

To remedy this serious state of affairs there should be a definite understanding that no patient who has been treated for tuberculosis of the lungs should ever be admitted to the merchant service. By the aid also of thorough medical examination, and of inquiries into the previous state of health, all tuberculous cases should be rejected. By this means material aid in diminishing the incidence of, and the death-rate from, tuberculosis among seamen would be given.

The following tables have been compiled to show the total number of admissions to the Dreadnought Hospital of patients suffering from pulmonary tuberculosis in 21 years (1890–1910 inclusive); the annual number of admissions under each class and the death-rate; also the percentage death-rate from phthisis calculated from the total number of deaths from all causes. In Table I. is given the total annual number of admissions under each rating; in Table II. the total annual admissions of phthisis cases with the percentage death-rate; and in Table III. the total deaths from all causes and the death-rate from phthisis calculated from such total.

TABLE I.—*Total Number of Admissions under each Rating.*

Year.	Able-bodied seamen.	Firemen.	Engineers.	Cooks.	Stewards.	Officers.	Various.	Total.
1890	41	13	13	8	2	2	3	82
1891	45	24	8	6	9	3	4	99
1892	47	24	2	3	6	0	7	89
1893	39	30	9	4	8	0	2	92
1894	41	25	5	7	3	2	0	83
1895	39	23	10	8	7	2	3	92
1896	42	28	9	10	8	1	4	102
1897	41	31	7	7	9	0	3	98
1898	47	33	13	6	10	1	2	112
1899	38	34	15	13	7	2	5	114
1900	32	29	17	5	10	0	2	95
1901	36	24	5	8	6	2	3	84
1902	41	23	3	3	9	1	3	83
1903	40	26	4	5	3	0	4	82
1904	39	21	2	4	10	3	8	87
1905	35	14	5	2	9	1	10	76
1906	28	29	1	5	10	0	4	77
1907	38	21	4	2	4	1	4	74
1908	21	24	3	3	5	0	7	63
1909	29	21	6	3	7	0	8	74
1910	23	17	3	9	5	1	5	63
Total	782	514	144	121	147	22	91	1821
Per cent. ...	42·9	28·2	7·9	6·6	0·8	1·2	5	—

TABLE II.—*Total Annual Admissions of Phthisis Cases, with Percentage Death-rate.*

Year.	Admissions.	Deaths.	Percentage death-rate.	Year.	Admissions.	Deaths.	Percentage death-rate.
1890	82	35	41·6	1901	84	31	35·7
1891	99	33	33·3	1902	83	30	36·1
1892	89	31	34·8	1903	82	31	37·6
1893	92	28	30·4	1904	87	37	42·5
1894	83	32	38·5	1905	76	17	22·3
1895	92	32	34·7	1906	77	30	38·9
1896	102	39	38·2	1907	74	35	47·2
1897	98	28	28·5	1908	63	28	44·4
1898	112	35	31·2	1909	74	20	27·0
1899	114	37	32·4	1910	63	22	34·7
1900	95	37	38·9				

TABLE III.—*Total Deaths from all Causes, with Death-rate from Phthisis.*

Year.	Total deaths from all causes.	Percentage death rate from phthisis.	Year.	Total deaths from all causes.	Percentage death-rate from phthisis.
1890	122	31·2	1901	130	23·8
1891	127	25·9	1902	142	21·1
1892	119	26·0	1903	113	27·4
1893	116	24·1	1904	125	29·6
1894	134	23·8	1905	116	14·5
1895	130	24·6	1906	136	22·0
1896	155	25·1	1907	144	24·3
1897	116	24·1	1908	127	22·0
1898	126	27·7	1909	100	20·7
1899	121	30·5	1910	123	17·8
1900	136	27·2			

On glancing rapidly over the foregoing tables, it will at once be apparent to anyone how great are the permanent disablement and loss of life from a preventable disease among a class of people who from the nature of their employment ought to show a very small percentage of deaths from such causes.

It is interesting to note with regard to the admissions that the total annual admission was at its highest in the years 1896–99 inclusive, and from that year onwards to 1910 the rate of admission has considerably and almost steadily decreased.

Classified according to ratings, the greatest number of admissions occur among the able-bodied seamen, among whom are included for convenience quartermasters, boatswains, ship's carpenters, and others who work on deck but are not classified under any of the other headings. The high admission-rate among the "able-bodied" may partly be accounted for by the fact that there are more sailors included in this than under any other heading, and it frequently happens that seamen of foreign nationality, unable to talk English, are admitted as sailors under this category.

Next come the firemen, and although the admissions among them are much less than in the preceding class, there is a very much greater incidence of phthisis among them than in any of the other succeeding classes—about equal, indeed, to the total of all the other sections put together. Stewards supply a greater percentage than cooks. Under the officer class are included first, second, and third mates and the captains. The rate among them is very small. Under the heading, "Various," are included stevedores, bargees, &c.

Death-rate.—It will be noticed that although the number of admissions has decreased the death-rate does not show a corresponding decrease. The highest number of deaths corresponds closely to the highest number of admissions, but the death-rate per cent. of total cases treated is highest in the years 1904–07–08. Comparing the actual number of deaths from phthisis with the total deaths from all causes, it will be seen that from one-fourth to one-sixth of the registered deaths are due to tuberculosis of the lungs. The highest death-rate per cent. calculated in total deaths from all causes occurred in 1890. The rate then slightly diminished until 1899, when it went up to 30, but since then it has kept below that figure.

To summarise the points brought out in the tables, it is seen that the number of admissions of cases of tuberculosis of the lungs has somewhat diminished during the last 10 years, but that the percentage death-rate out of the total numbers treated does not show a corresponding decrease, the highest figure, 47, occurring as late as 1907. This high death-rate is probably due to the advanced state of the disease in the majority of the cases before the patients seek treatment at the hospital. In the younger members of a crew who are admitted in a comparatively early stage of the disease the type is more often acute miliary tuberculosis, the course of which is very rapidly fatal.

If the crew of a ship were arbitrarily divided into two sections—viz.: (1) those who spend most of their time below deck, and (2) those who work for the most part on deck—it would be seen that tuberculosis is more frequent among the former than the latter. In the navy tuberculosis has decreased for the last 10 years. This is no doubt due to the fact that the conditions under which the sailor lives as regards sanitation and accommodation have vastly improved, and when cases of tuberculosis occur they are immediately invalided out of the service. In the merchant service there is still much room for improvement. Not only is there need of this in accommodation and ventilation, but the elementary principles of hygiene should, as far as possible, be instilled into the sailor and the danger of indiscriminate spitting brought before his notice by printed forms or otherwise. More stringent precautions also should be taken in that all subjects of tuberculosis should be discharged from the service, and no man who, on medical examination, shows signs of tuberculosis or gives a history of having suffered from it should be engaged for service on board ship.

But now comes the difficulty as to what is to be done with patients discharged as unfit for further service on board. Hitherto they have been allowed to drift about, and no provision has been made either in the navy or the merchant service by which the sufferers could be treated or given a chance to improve in health. Now that the National Insurance Bill includes the provision of State-aided sanatoriums, much good will be expected to accrue, but failing this it is high time that philanthropy extended its generous hand to provide a sanatorium exclusively for our sailors, on whom more than on any other members of the community the wealth and prosperity of the nation depend.

Seamen's Hospital, Greenwich, S.E.

A NEW THERMO-THERAPEUTIC METHOD IN GYNÆCOLOGICAL CASES.

BY S. FLATAU, M.D.,
NUREMBERG.

AGES ago the therapeutic instinct recognised the healing properties of warmth, and added them to its stock. But the employment of heat as a treatment, founded on scientific principles, dates from the time when August Bier collected, extended, and enlarged the earlier works of physiologists and pathologists in his system, "Hyperämie als Heilmittel."

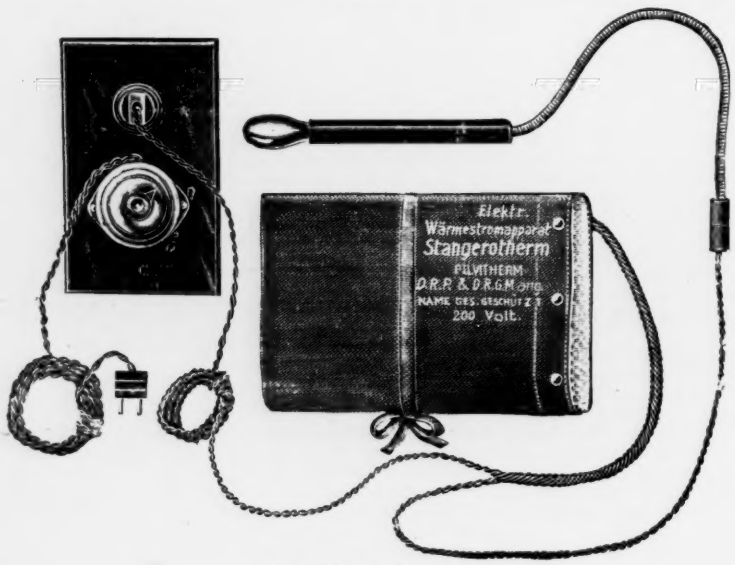
As a matter of course the gynæcologists, too, were desirous of applying the advantages of hyperæmic treatment to their special branch, the accessibility of the female genitals favouring the introduction of heat. Finally, according to the researches of Goldscheider,[1] the abdomen seemed especially adapted to the stimulating properties of warmth on account of the numerous nerve endings susceptible to heat which it contains (Ruffini termini). We know, indeed, that warmth exercises an expanding effect on the vascular system and that the amount of blood in the skin operates on the neighbouring deeper-lying vessels in the sense of causing a more rapid exchange, a larger "turnover."[2] As a matter of fact, the abundant subcutaneous cellular tissue by its low conductivity (which was demonstrated by Fuchs[3]) forms a great obstacle to the penetration of heat when we desire to apply it only through the skin. But, on the other hand, by reason of the extraordinarily decreased speed of the blood in the pelvic veins system, we may assume that the heat will not be too rapidly dispersed or lost, but that, on the contrary, it will accumulate. Moreover, the stimulating effect of heat-therapy increases, to a certain degree, with the degree of temperature and the duration of the application. It is on this hypothesis that thermo-therapy, in cases of pelvic diseases in women, must be built up.

But a long time passed before a useful and practical method, which was destined to receive widespread recognition in medical circles, made its appearance. Strictly speaking, the first applicable thermo-apparatus was that produced by Polano,[4] while working side by side with Bier and Klapp in Greifswald. In this apparatus hot air, up to a temperature of 100° C., was caused to circulate round the abdomen of the patient, the abdominal regions being isolated in a wooden case. But in spite of the excessive heat registered by Polano's thermometer, the

[1] Archiv für Psychiatrie, 1887.
[2] Matthes: Klinische Hydrotherapie, 1900.
[3] Zeitschrift für Biologie, vol. x., p. 73.
[4] Zentralblatt für Gynäkologie, 1901, No. 30.

temperature of the pelvic contents was very slightly affected, for heat which is applied to the skin penetrates it to only a very small extent. The subcutaneous tissues form a bad conductor. Furthermore, the perspiration which collects on the skin in large quantities, and with which the air in Polano's apparatus became saturated, formed another and still greater obstacle to heat penetration. If any hyperæmic result was produced in the interior of the pelvis it could only have been a very weakened, and if one may say so, a collateral, effect. Neither was the problem of raising pelvic temperature solved by the kataplasma ovens, heat boxes, and so-called thermophores, with highly saturated solutions of sodium acetate.

FIG. 1.



Dr. Flatau's "Pelvitherm."

Other gynæcologists endeavoured to obtain direct results in the diseased genitals. Incessant syringing from a sort of thermophoric vessel[5] was also recommended. Stratz[6] and Baumgärtner[7] designed apparatus by which they claimed that vaginal washings up to 50° C. might be carried out without scalding the external genitals. Finally Walser and Pinkus produced an instrument[8] which proved to be serviceable.

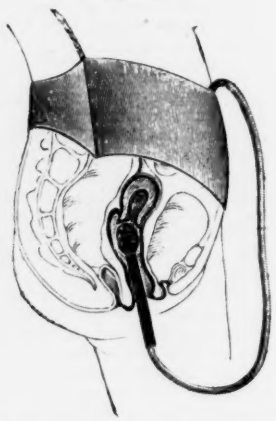
But the results of all these methods of applying heat are feeble and evanescent. Even if 20 pints of hot water are passed through the vagina, still the rise of temperature in the pelvic organs is practically *nil;* and, moreover, the processes require too much attendance. Hence arose the idea of Mirtl[9] and Stehlik[10] to construct a thermophore in the form of a "colpeurynter" filled with "thermaphore" salts, which could be introduced into the vagina. Unfortunately, the heating effect in this case also was insignificant, and the stock of heat in the thermophore decreased continuously instead of remaining constant.

To produce a source of heat that should remain constant was the problem to be solved in heating the pelvis. Its practical solution was only made possible by the improvement in thermo-electric apparatus. When I first saw the electric thermophore cushions, as made by the firm Heinrich Stanger, in Ulm, a solution of the problem immediately occurred to me. I made out of silver-plated metal a thick hollow rod ending in a sort of bulb (see Fig. 1). Within this is a mass of asbestos powder, which is heated by passing an electric current through it. A small indicator makes it possible to increase or decrease the temperature with sufficient delicacy.

[5] Pflanz: Zentralblatt für Gynäkologie, 1899, p. 1297.
[6] Ibid., 1898, No. 17.
[7] Monatsschrift für Geburtshilfe und Gynäkologie, 1897, p. 5.
[8] Ibid., 1899, No. 7.
[9] Wiener Medizinische Presse, 1899, No. 16.
[10] Münchener Medizinische Wochenschrift, 1899, No. 27.

The early practical tests which I made in my private clinic were successful. During the application the pelvic contents were always raised several degrees in temperature—that is, the pelvic organs were really heated. My experiments were still more successful when the introduction of the instrument into the vagina was combined with an electro-thermophore which covered the abdomen (Fig. 2). Through the proximity of two hollow organs, the bladder and the rectum, we have a good opportunity to measure the increase of temperature and the influence of the heat introduced into the pelvis. Numerous measurements were made in this manner, and the temperatures were read on thermometers introduced into the bladder and rectum (after the latter had been cleaned by enema). Here I give the averages of a very large number of readings expressed in Centigrade:—

FIG. 2.



Semi-diagrammatic view of the introduction of a "Pelvitherm."

	After 1 hour.	2 hours.	3 hours.
Bladder	38·8°	39·8°	40·2°
Rectum...	38·5°	39·2°	39·8°

The mode of application is the simplest imaginable. My apparatus can be connected up to any switch terminals or any electric lamp which can be replaced by a screw contact, and using either a continuous or an alternating current. The regulation of the heat introduced, as shown by the indicator, is best attended to by the patient, whose safest guide is her own sensations. There is no deposit of perspiration on the abdomen; the heat is absolutely dry. We know that, objectively considered, dry and damp heat are totally different phenomena, and subjectively, too, are differently felt; and dry heat is more agreeable to by far the most patients. My patients bore the application in all cases excellently; on other parts of the body, especially the breast and head, symptoms of their perception of increased temperature appeared as well as perspiration. Although measurements taken under the arm showed no increase of temperature in the body as a whole, increased activity of the heart and lungs was observed, but this was not severe enough to cause the patient inconvenience. If the vagina and the cervix uteri are examined in a mirror shortly after treatment, marked hyperæmia and hyper-secretion will be observed.

The diseases in which the apparatus is indicated are numerous, although greater experience in more extended medical circles is necessary before drawing hard-and-fast lines. Chronic disease of the para- and peri-metrium, chronic catarrh of the uterus and Fallopian tubes, so-called chronic metritis, exudation remains, dysmenorrhœa without evident cause, amenorrhœa in cases of uterine atrophy during nursing, all have shown symptoms of improvement under thermo-penetration. Catarrh in the bladder of long standing has also been favourably influenced.

On the other hand, the method is out of place in treating cases where there is fever, and in all diseases of the annexa in which pus is present or may be expected to form, and in tuberculosis of the genitals. As is well known, the gonococcus is hypersensitive to high temperature,[11] and hence diathermal experiments in cases of infection with Neisser's diplococcus would probably be attended with success. Usually I apply the instrument to patients for three hours daily, although, of course, there is no reason why this duration should not be increased. The temperature of the pelvis falls very slowly after the instrument is removed, so that the tissues only assume their normal temperature after one or two hours.

I demonstrated my apparatus before the Franconian Gynæcological Society on Oct. 24th, 1908, and spoke, too, of the extent to which it might be employed.[12] This I wish to emphasise because the whole idea was evidently in the air during the development of our electrotherapeutic methods—I mean the idea of diathermia, the thermo-penetration of segments of the body (*vide* the works of von Zeynek, von Preyss and von Berndt, Klingmüller and Nagelschmidt.) Thus, Sellheim described, 18 months later,[13] a process in which the temperature of the pelvic organs was raised to 40° and 41° C. by passing the so-called high-frequency currents (de Forrest current) between two electrodes. For the present, however, there are two arguments against the general employment of that method. First, we still know too little concerning the physical and biological effects of the high-frequency current on the living tissues. Secondly, Sellheim's apparatus is much too dear. Its price ranges from £35 to £45, and only one patient at a time can be treated. The purchase of a number of Sellheim's apparatus for a large gynæcological department with moderate means would be in most cases an impossibility.

Next, Feis, in Frankfort, in ignorance of my first publication, announced his kolpotherm.[14] In this instrument a small electric lamp is enclosed in a metal case and introduced into the vagina. Compared to the fragile carbon wire and glass case in Feis's kolpotherm, my device has the advantage of being absolutely unbreakable, and can be used for an unlimited length of time.

I do not report a large number of cases, but I wish to make more generally known a method which I devised three years ago, and since then have thoroughly tested in my clinic and in private practice. To recapitulate: (1) This vaginal heating instrument, the "Pelvitherm,"[15] raises the temperature of the female pelvis up to about 40° C. for any length of time; (2) its use, in contrast to all other existing methods, requires no special superintendence, and therefore does not take up the time of the clinical staff; (3) it can be used anywhere where electric light is in use, including the patient's home; and (4) the instruments are so cheap and lasting that every hospital or private practitioner can procure a number of them.

A CASE OF MYELOID LEUKÆMIA WITH CHYLOUS ASCITES.

BY HAROLD S. FURNESS, M.B., B.S. LOND.,
AND
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THE patient, a man aged 40 years, was admitted to the Lambeth Infirmary on July 12th, 1909. He complained of swelling of the abdomen, which commenced in January, 1908. In February and March, 1909, he was an in-patient of St. Mary's Hospital, where the diagnosis of splenomedullary leukæmia was made. By the kindness of Dr. Reginald Miller we are able to give the following particulars of his condition at that time:—

There was a general enlargement of the lymphatic glands, the liver and spleen were enlarged, there was some free fluid in the abdomen, and the urine was normal. The condition of the blood was as follows: Hæmoglobin, 70 cent.; red cells, 5,600,000; and white cells, 1,800,000. A differential count of the white cells gave the following percentages: Polymorphonuclear neutrophiles, 47; myelocytes, 20; large mononuclears, 6; small mononuclears, 26·5, and mast cells, 0·5. The red cells showed some poikilocytosis and variation in size, and polychromatophilia; nucleated red cells were very numerous, nearly all normoblasts.

Three weeks before admission to the infirmary the swelling of the abdomen increased considerably, and the legs had been swollen for three and a half months.

On admission the patient was pale, very short of breath, and there were dilated venules on the face; the lymphatic glands were everywhere enlarged. On the left side of the neck was a discharging sinus where an abscess had been opened two years previously. The abdomen was distended and the legs were markedly œdematous; there were signs of free fluid in each pleural cavity. On July 14th the abdominal distension was relieved by paracentesis, 11½ pints of milky fluid being withdrawn. It was then easy to feel the enlargement of the spleen and liver. The spleen formed a hard rounded tumour in the left hypochondrium, and reached below the umbilicus; the surface was markedly rough. The lower limit of the liver was a hand's breadth below the costal margin. The removal of the fluid gave great relief at first, but the abdominal distension soon recurred, and the œdema of the subcutaneous tissues increased. On the 23rd 8 pints of ascitic fluid, having the same milky appearance as before, were withdrawn. The patient died suddenly on the 24th. The condition of the blood was as follows: Hæmoglobin, 65 per cent.; red cells, 4,500,000; and white cells, 326,000. A differential count of the white cells gave the following percentages: Polymorphonuclear neutrophiles, 41·6; myelocytes, 52·4; eosinophile myelocytes, 0·4; small lymphocytes, 2·8; large lymphocytes, 1·6; eosinophile leucocytes, 0·4; and mast cells, 0·8. A specimen of the ascitic fluid was examined by the Clinical Research Association, who reported as follows:—

A faintly alkaline opalescent fluid of specific gravity 1015, only moderately albuminous in character. The opalescence persists after prolonged centrifugalising, but is more or less cleared up by extraction with ether, and the ethereal extract is found to yield a moderate quantity of fat. The centrifugalised deposit from the fluid consists of leucocytes with a slight admixture of red blood corpuscles. The following are the percentages of a differential count: Myelocytes, 28; eosinophile myelocytes, 12; polymorphonuclear neutrophiles, 23; lymphocytes, 7; eosinophile leucocytes, 8; and mast cells, 22.

The urine of the patient was milky in appearance like the ascitic fluid, and also contained myelocytes and a large quantity of albumin.

On post-mortem examination free fluid was found in the chest and the abdomen; that in the abdomen had the appearance already described, and that in the chest presented the ordinary characters of a serous pleural effusion. There was marked perisplenitis, the capsule of the spleen being greatly thickened and adherent to the anterior abdominal wall and omentum. Sections of the liver, the spleen, and the kidneys showed very numerous leukæmic nodules, which had the usual appearance under the microscope. A section from a gland in the neighbourhood of the discharging sinus in the neck showed characteristic tuberculous giant cells and patches of degeneration.

The interest of the case lies in the presence of large numbers of myelocytes in the ascitic fluid and urine, the chylous nature of the ascites, and the extensive general enlargement of the lymphatic glands.

We are indebted to Dr. W. H. Willcox for the use of the notes taken at St. Mary's Hospital, and to Dr. M. H. Quarry for permission to publish the case.

Lambeth Infirmary, S.E.

[11] Quincke, Berliner Klinische Wochenschrift, 1897, Nos. 49 and 50; Abutkow, ref. Zeitschrift für Diätetische und Physikalische Therapie, 1900, p. 615; Eitner, Wiener Klinische Wochenschrift, 1909, p. 1173.
[12] See official report in No. 2, Münchener Medizinische Wochenschrift, 1909.
[13] Monatshefften für Geburtshilfe und Gynäkologie, May, vol. xxxi.
[14] Münchener Medizinische Wochenschrift.
[15] To be obtained from Heinrich Stanger, manufacturer of electrical apparatus, Ulm, Germany, price £3.

UNIVERSITY OF BIRMINGHAM.—The Dean and Faculty of Medicine of the University will give a conversazione to inaugurate the opening of the session of the Medical Faculty of the University on Monday, Oct. 2nd.

VIEWING THE BODY.—The question of the juror's viewing the body at an inquest is perennially green. The Home Secretary has replied recently to the Wilmslow authorities, who addressed him in protest against the existing law, that he could not hold out any prospect of legislation at present. At Bolton the compulsory viewing of bodies has just been strongly protested against by several jurors, when the coroner said that the best course would be to pass a resolution framing their opinion, and forward it to the local Members of Parliament.

Reviews and Notices of Books.

Die Basedow'sche Krankheit. (*Basedow's Disease.*) Von H. SATTLER, Professor in Leipzig. Part II. From Graefe-Saemisch' Handbuch der Gesamten Augenheilkunde. Leipzig: W. Engelmann. Pp. 154. Price 6 marks.

THIS section of Professor Sattler's exhaustive contribution on exophthalmic goitre to the Graefe-Saemisch' Handbuch deals with a variety of questions in connexion with the affection. In Part I. the symptomatology of the classical or typical form of the disease was fully discussed.[1] Here attention is drawn to the various incomplete forms (*formes frustes*), in which one or more of the cardinal symptoms are absent through the entire period that a case is under observation, or, at any rate, during a very great part of its course. Of these forms there are one or two that call for more particular notice—viz., the so-called kropfherz (thyreotoxic cardiopathia), the struma basedowificata, and the "basedowoid" variety.

In cases of kropfherz, cardio-vascular symptoms, usually accompanied by tremor, a tendency to perspiration, and increased excitability, supervene upon a simple goitre that has existed for a longer or shorter period. In some these symptoms are, no doubt, due to mechanical causes, whether from pressure of the deep-seated goitre on the air-passages (whereby changes in the lungs, the pulmonary circulation, and the right side of the heart are produced), or on the great veins opening into the right auricle (the struma vasculosa venosa of Kocher), or in exceptional cases from pressure of the goitre on the nerves in the cervical region. The great majority of these cases, however, occur independently of any mechanical pressure, and it is to this class that the name thyreotoxic cardiopathia (thyreotoxisches kropfherz) is applied. This condition is most frequently met with in young girls; it is favourably influenced by the administration of iodides or preparations of thyroid gland, and may continue for years without developing into the typical form of the disease. It possesses, therefore, characteristics which distinguish it from other incomplete forms, and are of importance from the point of view of prognosis and treatment; from an etiological standpoint, however, it really forms a link in the chain of diseases with artificial thyroidism at one end and typical Graves's disease at the other, which are all due to the toxic influence of a specific pathological condition of the thyroid gland.

In struma basedowificata, sometimes called secondary Basedow's disease, one finds the typical symptom-complex of exophthalmic goitre grafted on a simple goitre of long standing, the exciting cause of the further development in such cases being some mental shock, infectious disease, or operative procedure undertaken for the goitre. In this group some of the symptoms of the typical form—e.g., exophthalmos—are not infrequently absent. The same symptoms may supervene in cases of malignant disease of the thyroid gland. It is difficult to account for their development in such cases. It is suggested that the growth of the tumour in the thyroid gland sets up changes of a similar character to those produced in it by other agencies, such as the application of X rays to a goitre, although it has been shown that the histological appearances of carcinoma of the gland, as well as of the metastatic growths from it, are sometimes in many respects similar to those found in the goitre of typical Graves's disease. In the "basedowoid" variety of R. Stern it is the wide group of nervous symptoms that are most pronounced, this condition being sometimes mistaken for neurasthenia. An attempt has been made to distinguish this variety as a separate entity from the classical type of exophthalmi goitre, because of the presence of some hereditary neuropathic taint in such patients, but such a distinction the author considers too arbitrary to be entertained.

In the chapter on the course of this eminently chronic affection reference is made to the acute form which it sometimes takes at different stages, the tendency to relapse, and the very rapid development of symptoms that is sometimes manifested where the cases run a short course and end fatally or, more infrequently, in complete recovery.

The discussion of the termination of the disease is one of interest. It is pointed out that statistics on the death-rate that have been drawn from hospital practice are misleading from the fact that it is chiefly the more severe cases that are admitted to hospital, while the great number of mild cases are seen only outside or, it may be, are sometimes not recognised; on the other hand, where the number of cases observed has not been very large, the inclusion of a few acute and fatally ending cases renders the percentage unduly high. Another source of error lies in the fact that few observers are able to follow the subsequent history of patients that have been discharged as improved or cured. An analysis of a wide range of cases recorded in the literature shows the mortality to be 11 per cent. As a general rule the danger of a fatal issue is proportional to the severity and acuteness of the case. The question of the proportion of recoveries depends on the strictness with which different observers regard such a result. This varies considerably, as is seen from the figures quoted by writers in different countries, and while a very large number of cases attain what may be termed a relative recovery, where the patients are free from any subjective symptoms and can resume their ordinary vocation, the author comes to the conclusion that complete and permanent recovery is very rare where the disease has existed for any length of time and the symptoms are numerous and well marked. Attention is also drawn to the various conditions, such as pregnancy, as well as gynæcological and intranasal operations, that have a favourable influence on the issue of this disease.

After a consideration of the order in which the various clinical symptoms may usher in this affection, the questions of age and sex are taken up. From an analysis of 3800 cases gathered from the literature and the author's own observation it is found that the proportion of females to males affected is 5·4 : 1, but it varies in different countries and in different parts of the same country. It is worthy of note that in England the ratio of incidence among females is very much higher; out of 13 writers in this country there are only three in whose series of cases the proportion between the sexes approaches that of the average above mentioned; in the reports of all the other writers, and especially in those in which large numbers are available, the preponderance of cases of the female sex is much more pronounced, the ratio in a total of 660 cases being 23 : 1. As regards the incidence at different periods of life, it has been found that out of 3477 cases where the age of the patients was recorded 184 have occurred before the sixteenth year; amongst these there is a relatively larger percentage of males than females. In the latter sex the greatest number of cases occurs between the sixteenth and fortieth year of life, and after the age of 45 the predominance of females affected becomes less, except about the menopause, when there is a slight increase. Amongst male patients most cases occur between the twentieth and thirty-fifth year, and after the forty-fifth year the percentage of males is appreciably greater than that of females—viz., 20 per cent., as compared with 14 per cent. for the latter.

The chapter on the characteristics of this disease in childhood brings out a number of interesting points on the general

[1] See THE LANCET, August 20th, 1910, p. 547.

resemblance of its clinical characters to those observed in adults, and emphasises the relatively mild form and course which it takes. The volume concludes with an account of the geographical distribution of Graves's disease—in which the variation in its frequency in various parts of the world is well brought out and comment on its prevalence in this country is made—the so-called Basedow diathesis, and the occurrence of the disease among the domestic animals. The bibliography is continued in this part and brought up to the end of 1909.

Handbook of the Surgery of the Kidneys. By W. BRUCE CLARKE, M.A., M.B Oxon., F.R.C.S. Eng., Senior Surgeon to St. Bartholomew's Hospital; formerly Surgeon to the West London Hospital and to St. Peter's Hospital for Stone and Other Diseases of the Urinary Tract; Member of the Council and of the Court of Examiners of the Royal College of Surgeons of England; formerly Examiner in Surgery to the University of Oxford. With 5 plates and 50 illustrations in the text. Oxford University Press: Henry Frowde. London: Hodder and Stoughton. 1911. Pp. 199. Price 10*s.* 6*d.*

MORE than 20 years ago Mr. Bruce Clarke was awarded the Jacksonian prize by the Royal College of Surgeons of England for an essay on the surgery of the kidneys, and ever since that time this department of surgery has had a special interest for him; and now, after this long interval, he has put into print the fruits of his experience of renal surgery. He acknowledges that some of the views he has put forward are at variance with those which are generally held, but the record presented in this book is a personal one, and he has referred to the views of others mainly when they differ from those which he holds. The book is not intended to be an encyclopædia of the progress of the surgery of the kidney, but rather a handbook for the busy practitioner and a record of the opinions held on this subject by a surgeon who has had ample opportunities for studying it very thoroughly.

The book commences with an account of the normal and the abnormal anatomy of the kidneys and ureters, and here we have a very simple account, without any unnecessary refinements, of the relations of the kidneys, so that it is easy for the reader to form a clear idea of the position of the organs and of the structures with which they are in relation. The second chapter describes the way in which a patient should be examined in order to ascertain whether there is anything wrong with the kidney, and the main conditions are indicated which have to be distinguished from enlargements of the kidney. The situation of pain due to disease of the organ is then considered, as well as the direction along which that pain may spread. The author speaks in favour of the use of a urinary separator for the purpose of comparing the urine from the two kidneys, but he refers also to such other methods as the methylene-blue test and the cryoscopic test. He mentions, however, that the latter test can only be carried out by a practised hand, and that it cannot be regarded as of any value in the daily routine of surgical practice, unless the surgeon is able to command the services of a skilled pathological chemist. In the chapter on operations on the kidney Mr. Bruce Clarke states that for the operation of lumbar nephrectomy he prefers to make the incision below and parallel to the last rib, and by the same incision he removes stones from the upper part of the ureter. He speaks with approval of an apparatus devised by Professor Watson of Boston, Massachusetts, for catching urine in the loin, either after the formation of a urinary fistula, or for cases in which the ureter is brought out into the loin.

In the chapter on wounds and injuries of the kidney the author mentions an important point in diagnosis—that renal injury alone is, in his experience, never associated with severe shock and a depressed temperature, and therefore the presence of shock following on an accident and coupled with a rapid fall of temperature is suggestive of injury of some other abdominal organ rather than of renal trouble. The author considers that if a moveable kidney causes no pain or inconvenience no treatment is needed, but if it is certain that the kidney is giving rise to symptoms an operation is needed, for he holds that belts are of little value. He performs Hahn's operation of nephropexy. An important chapter is that devoted to stone in the kidney and ureter; this is illustrated by a large number of skiagrams of renal stones *in situ*, and a very excellent skiagram from a case under the care of Mr. P. Furnivall shows even the laminated condition of the stone. Stress is laid on the need to distinguish shadows cast by stones from those cast by calcified glands or fæcal contents. Chapters on tuberculosis of the kidney and pyelonephritis follow. Mr. Bruce Clarke concurs in the opinion which is generally held at the present time that tuberculosis may be confined to one kidney for a long period. In the treatment of acute pyelonephritis due to the bacillus coli the author expresses great faith in the use of vaccines. The final chapter deals admirably with renal tumours.

We congratulate Mr. Bruce Clarke on the result of his labours; the one criticism which we offer is that some of the illustrations which are reproduced from photographs do not show clearly what they are intended to portray—for instance, Figs. 42 and 43; and better results would have been obtained if they had been re-drawn. The main characteristic of the book is its practical nature, and its value lies in the fact that it is likely to prove of service to the practitioner in his daily work.

Diagnostic and Therapeutic Technic: A Manual of Practical Procedures Employed in Diagnosis and Treatment. By ALBERT S. MORROW, A.B., M.D., Adjunct Professor of Surgery in the New York Polyclinic; Attending Surgeon to the Workhouse Hospital and to the New York City Home for the Aged and Infirm. With 815 illustrations, mostly original. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 775. Price 21*s.* net.

MODERN methods of diagnosis and treatment of disease in all departments of practice involve the use of minor manipulative measures, the technique of which is taken for granted or but briefly considered in many text-books. Dr. Morrow, realising the importance of the details of many of these in regard to their effective or successful employment, has collected them in the book before us, and has described them simply and practically. He has illustrated his descriptions with copious diagrams, from which all unnecessary details are eliminated. In nearly every case the instruments used are figured, so that the necessary apparatus for each procedure can be seen at a glance. It is obvious that in regard to such matters dexterity can come only from practice, but clear descriptions, including practical hints, should be useful aids to the practitioner in applying these methods, which are becoming daily of greater importance, and in avoiding the dangers or disadvantages of limited experience, since in not a few instances the causes of failure are indicated.

The opening chapters deal with the administration of general anæsthetics and the production of local anæsthesia. Sphygmomanometry forms the subject of the next chapter, and several of the more commonly employed instruments are figured and their use is described. The technique of transfusion is then examined, and the details of various methods, including those of Crile and Carrel, are carefully explained and illustrated. The various ways of infusing physiological salt solution are next reviewed. A chapter is devoted to certain miscellaneous procedures, such as the hypodermic and intra-muscular administration of drugs, vaccination,

acupuncture, venesection, scarification, cupping, and leeching. The uses and methods of application of Bier's hyperæmic treatment are described; and sensible directions are given as to the manner of applying the method, the time for which it should be given, and the choice of cases for its employment. The collection and preservation of pathological material for microscopical or bacteriological investigation are next dealt with. The necessary apparatus is figured, the precautions to be taken are clearly indicated, and the manner of collecting and preserving the substances obtained is in every case clearly stated. Exploratory punctures and the aspiration of various cavities for therapeutic purposes are described in the detail that their importance demands. In aspiration of the abdomen for ascites the use of a straight or curved trocar with a diameter of ⅛ to ¼ of an inch is recommended. Tapping by means of a long Southey's cannula and a fine rubber tube to facilitate drainage, which is often a very satisfactory measure, is not described.

The remainder of the book deals with the application of digital or instrumental methods to the diagnosis and treatment of the individual organs or regions of the body. Space will not permit us to enumerate all the various methods described, but they comprise many of the newer as well as the older procedures, and they are invariably given in sufficient detail to be readily understood and applied. The nose and accessory sinuses, the ear, the tongue and trachea, the œsophagus, stomach and intestines, urethra, prostate, bladder, kidneys, and generative organs are all separately considered. Among the methods described we may mention tracheobronchoscopy, œsophagoscopy, urethroscopy, cystoscopy, and catheterisation of the ureters.

Dr. Morrow's book is essentially practical and should be useful to the hospital resident and to the practitioner who wishes to employ up-to-date methods in diagnosis and treatment.

Nouvelles Méthodes de Sero-diagnostic. Syphilis, Mycoses, Kystes Hydatiques, Lèpre, &c. (*New Methods of Serum Diagnosis*) Par le Dr. ED. JOLTRAIN, Ancien interne des Hôpitaux. Préface du Professeur GAUCHER Troisième édition, avec figures, revisé et augmentées. Paris: A. Maloine. 1911. Pp. 254. Price Fr.4.

THIS book presents in convenient and intelligible form the general technique of the Wassermann reaction and of some of its many modifications, together with a clearly written exposition of the principles upon which they are founded and a review of their practical uses and of their limitations.

The general nature of immunity reactions is first briefly indicated, then some experiments upon the agglutination of the treponema of syphilis are described, and the fundamental facts in regard to hæmolytic reactions are outlined. Wassermann's method is described in full detail, with the manner of preparing and titrating the individual reagents necessary, and with a full account of the various controls essential to its proper performance. An interesting analytical and statistical study is given of its indications in regard to syphilis in all its stages, including the various forms of visceral lesions and the parasyphilitic affections. The influence of various therapeutic agents upon the reaction, such as mercury and organic forms of arsenic, is discussed. The results obtained by Wassermann's reaction with the cerebro-spinal fluid are compared with those afforded by the cytology of the fluid and by Noguchi's butyric acid test. The various non-syphilitic conditions in which a positive reaction has been obtained are discussed—namely, leprosy, scarlet fever, certain diseases due to spirilla and trypanosomes, and in some persons under narcosis. The application of similar methods to other affections, such as sporotrichosis, actinomycosis, hydatid disease, mycosis fungoides, and a number of infective processes, including pneumonia, Mediterranean fever, relapsing fever, tuberculosis, and leprosy, is also dealt with. Other serum reactions, including the opsonic index, the determination of antitryptic power, and the meiostagmine reaction, are also described, and the results obtained by them are briefly referred to.

Dr. Joltrain's book has reached its third edition, and merits the commendatory remarks bestowed upon it in Professor Gaucher's preface.

Hygiene for Nurses, Theoretical and Practical. By HERBERT W. G. MACLEOD, B.Sc., M.D., C.M. Edin., M.R.C.P. Lond., D P.H. Lond. and Camb. With 49 illustrations. London: Smith, Elder, and Co. 1911. Pp. 233. Price 3*s.* 6*d.* net.

THE necessity of including lectures or instruction in hygiene to nurses generally at the hospitals, including those in London having medical schools, has apparently been overlooked as part of their regular training. Nurses certainly have to ventilate the wards and to see that the annexes, closets, and baths are kept in a clean state, but they do not receive systematic instruction in public health. The author of the work under review recognises the important rôle that hygiene plays in nursing duties, and he explains simply and concisely the more important facts in public health a knowledge of which is valuable to a nurse in her daily work. The information given will be found extremely useful to those who desire to obtain a certificate in hygiene from the various public bodies which grant them.

The methods of instruction adopted by Dr. Macleod are those employed by him as one of the lecturers to the Queen Victoria Jubilee Institute for Nurses, and his methods are thorough. Attention is directed to those sanitary laws of the United Kingdom useful to nurses, and some of the most recent regulations and by-laws of the Local Government Board and the London County Council are inserted. The information regarding the sick-room, ventilation, heating, lighting, water-supplies and fittings, and drainage is given at length, and should be of practical value to every nurse when treating a case in a private house. A table of the chief infective fevers, giving useful information, has been included. Food, milk, and personal hygiene are all carefully considered.

The author has, on the whole, confined a wide selection of subject-matter within narrow limits, and what has been written will be very helpful to those for whom it is primarily intended.

The Anatomy of the Brain and Spinal Cord. By J. RYLAND WHITAKER, B.A., M.B Lond., Fellow of the Royal College of Physicians, Edinburgh; Lecturer on Anatomy, Surgeons' Hall, Edinburgh, and School of Medicine for Women, Edinburgh; Examiner in Anatomy, Royal College of Physicians, Edinburgh. With 36 plates comprising 103 figures, many of which are coloured. Edinburgh: Messrs. E. and S. Livingstone. 1911. Pp. 228. Price 5*s.* 6*d.* net. Fourth edition.

Dr. Whitaker is to be congratulated on the fact that this book, which he wrote originally in his student days, has now, after a rather long dormant period, appeared again in the shape of a fourth edition. The author's claims for the little book are, and always have been, exceedingly modest, for the work is intended merely as a first introduction to the study of the central nervous system. A simple outline is provided, and the author has resisted the temptation, which the demand for a fourth edition and an accumulated mass of modern literature must have furnished, to enlarge the aims and scope of the work beyond the limits of its present utility. As a simple outline it has already proved its worth. The present edition has fallen into line with the requirements of modern terminology, and it contains a large number of clear

and useful diagrams which should be grasped without difficulty by the student who for the first time attempts to follow the complicated maze of cerebral anatomy. The author is fortunate in steering a happy middle course between the avowed "cram" book and the detail-laden modern text-book. The sphere of usefulness filled by the former editions of the work should be equally well occupied by the present issue.

Kursus der Normalen Histologie. Ein Leitfaden für den Praktischen Unterricht in der Histologie und Mikroskopischen Anatomie. (Course of Normal Histology, being a Guide for Practical Instruction in Histology and Microscopical Anatomy.) Von RUDOLF KRAUSE, a.o. Professor der Anatomie an der Universität Berlin. Mit 30 Figuren im Text und 208 mehrfarbigen Abbildungen auf 98 Tafeln nach Original-Reichnungen der Verfassers. Berlin und Wien: Urban und Schwarzenberg. 1911. Pp. 441. Price M. 20; bound, M. 22 50.

THIS work is designed by its author to give his medical students a thorough practical training in histology by the simplest available means, and the preparations he describes are such that most of them can be made by the student himself. The author attaches the greatest value to the freezing method of section-making, and he uses the Schanze pattern of microtome and carbonic acid as the freezing agent, while, of course, not excluding other methods Rightly, he lays great stress on the importance of making drawings of the preparations themselves. To this end he has himself drawn and coloured 208 preparations, which are reproduced in 98 beautiful plates accurately drawn, which give a guarantee that the methods used by the author are most satisfactory.

After a short description of the microscope and the mode of using it (pp. 1–24), about 70 pages are given to general micro-technics, including methods of fixing, teasing, cutting, decalcifying, and staining sections. All this is on the usual lines. The special part is divided into three unequal sections, dealing with cells, tissues, and organs. A careful description is given of each plate—first the magnification employed, and then the method used is stated, e.g., "Liver Cell of Salamander. 1000. Sublimate 3 p.c. Freezing. Biondi solution," and so on throughout the volume. Plates 1–11 inclusive contain 34 coloured figures and deal with the structures and characters of cells and epithelium in general. Plates 12–32 (82 figures) give a beautiful series of stained examples of tissues, including blood. The chapter on blood might perhaps be expanded. The rest of the plates are devoted to the study of the various organs. The organs of the circulation, lymphatics, and spleen are dealt with in Plates 33–38 (13 figures); ductless glands, Plates 39–41 (6 figures); digestive organs, Plates 42–55 (29 figures); respiratory organs, Plates 56–58 (5 figures); urinary and reproductive organs, Plates 59–67 (20 figures); motor organs, including motor and sensory terminations of nerves and muscles, Plates 68–71 (7 figures); nervous system, Plates 72–85 (29 figures); sensory organs, Plates 86–92 (13 figures); skin and mammary glands, Plates 93–98 (11 figures). This summary shows approximately the range of subjects embraced in the illustrations.

There are a few omissions—e.g., parathyroids and the results of the Golgi method for gland structures—though, on the other hand, very full details are given as to the use of the *intravitam* method. There are relatively few examples of organs with the blood-vessels injected; thus there is no section of injected lung, thyroid, muscle, stomach, cerebrum, and so on. In the descriptive text, also, references to the actual sizes of the cells or parts are missing. Perhaps this is intentional, as the work deals with the practical instruction in microscopic anatomy, but size should not be excluded. We see that for elastic fibres the author uses the resorcin-fuchsin method and omits the well-known orcein stain.

The work as a whole is accurate and painstaking, while the methods are carefully selected and are such as have commended themselves to the author, and we are sure that they will prove equally satisfactory in the hands of his English *confrères*. We should note that in many cases the magnifying powers are higher than those ordinarily used in some medical schools in this country. We commend Professor Krause's treatise to histologists generally.

Abnormal Psychology. By ISADOR H. CORIAT, M.D., Second Assistant Physician for Diseases of the Nervous System, Boston City Hospital. London: William Rider and Son. 1911. Pp. 329. Price 5*s.* net.

THE study of abnormal mental phenomena is a part of human knowledge which should be undertaken only by such as have had adequate medical and scientific training and education. The general reader has a certain interest in the problems of human personality, in the subconscious mind and its workings, in the curious cases of loss of memory or hysteria that find their way into the public prints; and if his conception of these difficult matters is not to be hopelessly vitiated by imperfect understanding he must be willing to learn from someone who has devoted himself to work in this province how meagre is the basis of established fact on which facile hypotheses are all too readily erected. When the abnormal mental phenomena above referred to are made to include crystal-gazing, automatic writing, and other kindred topics, the need for scientific caution is the more pressing.

In this small volume from the pen of Dr. Coriat will be found a series of discussions on the phenomena of the subconscious life, on the emotions, dreams, sleep, hypnosis, as well as on such pathological conditions as losses and illusions of memory, splitting of personality, hysteria, neurasthenia, psychasthenia, and psycho-epileptic attacks. The principal work in this field is summarised, and personal observations and experiments are added. Dr. Coriat explains and illustrates with lucidity and aptness, and his book can be recommended to the physician and to the layman whose tastes lead them to desire to explore these fascinating by-paths of mental life. In some ways the book is rather unequal. In the chapter on illusions of memory and the sensation of "*déjà vu*," reference might with advantage have been made to the light thrown on the subject by a consideration of the symptomatology of lesions of the uncinate gyrus and temporo-sphenoidal lobe. In the paragraphs dealing with what the author calls "psycho-epileptic attacks," he does not draw very clear distinctions between hysterical fits, psychic equivalents of true epilepsy, and such "functional" conditions as vaso-vagal attacks, the latter of which are frequently associated with marked psychical disturbances. Dr. Coriat gives due attention both to Janet's and to Freud's theories of hysteria and psychasthenia, but the reader is not enlightened as to their relative merits or demerits. As a whole, however, this little book contains much material not often brought within such small compass, and it may be read with pleasure and profit.

Recent Advances in Hæmatology, being the Dr. James Watson Lectures for 1910. By WALTER K. HUNTER, M.D., D.Sc. Glasg. With a coloured plate. London: Henry Kimpton. Glasgow: Alexander Stenhouse. 1911. Pp. 119. Price 5*s.*

IN this volume the author has reissued in book form the Watson lectures delivered by him before the Royal Faculty of Physicians and Surgeons of Glasgow in 1910.

The first lecture is devoted to the consideration of the blood itself, and in it are fully pourtrayed the matters

connected with the specific gravity, the alkalinity, the coagulation, the viscosity, and the cryoscopy of this tissue. The questions concerning the fat in the blood and the spectroscopic examination of the latter are next considered. The criticisms of the writer on these points are of much value. For example, he points out the small clinical importance to be attached to the estimation of the specific gravity, inasmuch as this is, speaking generally, an estimation of its hæmoglobin, whereas this can be measured more accurately by the hæmoglobinometer. Critical remarks will also be found concerning the question of the coagulation of the blood. This lecture concludes with an account of the various forms of red and white corpuscles, and it is illustrated by an excellent coloured plate.

The second lecture deals, first, with the origin of these corpuscles, as well as their mode of production, the two tissues chiefly concerned being the bone marrow and the lymphatic glands. The author then proceeds to pass in review some of the recognised diseases and disorders of the blood, and to place before his readers the present position of our knowledge as regards their etiology and pathogenesis. In this lecture will be found the facts related to secondary anæmia, chlorosis, splenic anæmia, kala azar, and infantile splenic anæmia. An interesting point narrated is the disappearance that is going on in America of chlorosis, there not being in that country nearly so many cases as there were five or ten years ago.

In the last lecture the author deals with the various forms of pernicious anæmia, paroxysmal hæmoglobinuria, splenomegalic polycythæmia, enterogenous cyanosis, leukæmia, purpura, hæmophilia, and scurvy. The section dealing with the subject of pernicious anæmia is one of the best in the book; the author makes five groups of this affection, as he rightly states that as yet there is no settled agreement as to what shall constitute the boundaries of this disease. He appears to favour the view that scurvy is a disease infective in origin. This view was also put forward some few years ago by Coplans in South Africa,[1] but the arguments in its favour are not very convincing.

This small volume concludes with an appendix wherein are described the various methods connected with the fixing and staining of blood-stains. The lectures will be found of great value to those who are interested especially in hæmatology, and Dr. Hunter has done wisely to issue them in volume form.

Some New and Interesting Points in Ships' Hygiene. By W. MELVILLE DAVISON, M.B., B.S., Medical Superintendent of the Booth Steamship Company, Limited. Bristol: John Wright and Sons. 1911. Pp. 87. Price 4*s.* net.

THE short title of this book is misleading, but the full title accurately describes the contents. It is not a book on ships' hygiene; for instance, there is nothing said about the ventilation, the drainage, the furnishing, the painting, the storage of food-supply, the cubic space per inmate, and many other problems affecting the health of those who live on board. But the book is valuable because practical and interesting in the account given of what can be done in regard to the new requirements that very recent discoveries have proved to be necessary. Perhaps the oldest of these comparatively new requirements is the killing of rats. Attempts have always been made to deal with rats, if only for the sake of saving the cargoes; but now that they are recognised as plague-carriers the rat grievance has become a much more serious matter. With the fleet of the Booth Line at his disposal Dr. Melville-Davison has made experiments on a very large scale with a rat-killing virus. The story of these experiments is remarkably interesting, for it was found that while the rats had become immune to the disease conveyed by the virus, the immune rats acted as disease-carriers to other rats that had not attained immunity. The rat problem, though not absolutely solved, can be mitigated, it is claimed, to the extent of 80 per cent. This would be worth effecting, not only as a measure against plague, but on financial grounds. It is calculated that the total annual damage to British ships done by rats amounts to £262,500. By the use of the virus this, it is suggested, might be reduced to £52,500; but there would be the cost of these operations, estimated at £13,125. Deducting these two sums from the loss usually experienced, we would have a net annual saving of £196,875.

The danger of mosquitoes and vermin as disease-carriers is also a recent discovery, and the little volume before us deals extensively with the practical means of getting rid of these pests. Not only is there given a full scheme of so constructing the port-holes, the ventilators, and the doors that mosquitoes cannot get inside a ship, but the authorities of the Booth Line have availed themselves of their medical officer's suggestions and built their new ship *Hildebrand* on these principles. All who are interested in sanitation at sea will congratulate the company on their enterprise, which should enable us to take a voyage to the Brazils with much less risk of contracting yellow fever, and with better prospect of enjoying a quiet sleep at night, even in the tropics. The suggestions made in regard to cockroaches call for very full research and experiments. This insect, it appears, carries numerous parasites, and cases of beri-beri have occurred at sea where there was no contact with other cases, but cockroaches had been found in the rice which the patients had eaten. There is much that is new and suggestive in this volume.

LIBRARY TABLE.

British Rainfall, 1910. By H. R. MILL, D.Sc., Director of the British Rainfall Organisation. London: Edward Stanford. 1911. Pp. 440. Price 10*s.*—All students of Nature and scientific observers will join in congratulating Dr. Mill on the completion of the fiftieth annual volume on British rainfall, which now contains the records of 4874 observers, this being a net gain of 190 over the previous year. The organisation is now vested in a body of trustees, but the available funds are not sufficient to carry on the work, a deficiency of £142 having had to be met by the director. The principal novelty in the present report consists in a rearrangement of the rainfall stations. When Mr. Symons commenced the publication of the annual volume in 1862 he adopted "with considerable hesitation" a classification of the stations by counties. Dr. Mill has now grouped them according to the river basins in which they are situate, this being the only satisfactory method from the standpoint of physical geography; but as for practical purposes the division by counties could not be abandoned, each county has been divided by watershed lines, so that the "river divisions" can be built up either into counties, or into river-basins, as desired. The mean rainfall for all stations in England in 1910 was 35·98 in., being 11 per cent. above the average of 35 years; in Wales it was 53·50 in., or 16 per cent. in excess; in Scotland, it was 46·46 in., or 3 per cent. above; and in Ireland 44·23 in., or 8 per cent. above the average. The wettest place in the kingdom was Llyn Llydaw, Snowdon. Here 187·06 in. were registered; in England, at the Stye, Cumberland, 144·40 in. fell; in Scotland, 145·45 in. fell at Laon, Loch Quoich; and in Ireland, 83·30 in. fell at Lough Caragh. The least rainfall, 19·44 in., was registered at Stockton, in Durham. In

[1] See Notes from South Africa, THE LANCET, Sept. 9th, p. 801.

discussing the rainfall of 1910 as compared with the yearly rains during the 30 years since 1881 three points of interest are brought out: (1) this was the first wet year for the British Isles as a whole since 1903, and with the exception of that year and of 1900 it was the wettest since 1882; (2) the years 1909 and 1910 have been the first instance of two consecutive wet years in England and Wales since the long run of wet years ended in 1883; and (3) the succession of one wet year following two dry years, which has been repeated in England and Wales seven times without a break from 1889–91 to 1907–9, has at last broken down. This seems to point to the approaching close of the long period of preponderating dry years, from which forecast agriculturists and others may derive some consolation for the abnormal conditions of the present summer.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—So far as original matter is concerned the greater part of the September issue of this magazine is occupied by a lengthy communication from Professor J. Rutherford Morison on the subject of intestinal obstruction. The author gives notes of 39 cases treated by him during 1910. He points out that whereas the results obtained in recent years in cases of chronic obstruction are far better than those of an earlier date, in the case of acute obstruction little advance seems to have been made. Here the most essential point is early diagnosis with immediate operation, while the technical skill demanded is not so great. Mr. J. Hogarth Pringle records in a clinical note a case of aneurysm of the third part of the left subclavian artery treated by aneurysmorrhaphy.

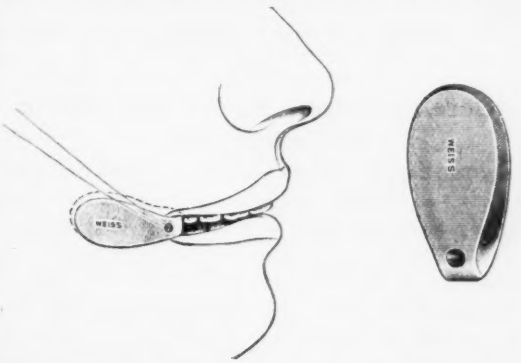
The Dublin Journal of Medical Science.—Lady Aberdeen's presidential address to the recent Health Congress in Dublin is published in the September number of this journal. In it her Excellency draws attention to the importance of enlisting the interest and gaining the assistance of the mothers of the country in the cause of sanitary progress, and accordingly points out the need for courses of instruction in such matters in the scheme of education adopted for girls of all classes. Dr. J. H. Woodroffe writes on the pupil and its reflexes in health and disease, and Dr. A. F. B. Shaw on Artificial Eruptions, under which title he deals with eruptions due to drugs and allied agents rather than with factitious lesions of the skin.

The Medical Chronicle.—In the September number of this magazine there appears a dissertation by Dr. J. Stirling Young embodying the results of much careful observation on the histology of the ovary. He treats first of chronic ovaritis, and finds that there does not exist a chronic idiopathic or primary ovaritis apart from syphilis and tuberculosis, all other inflammatory conditions of the ovary being secondary to uterine or tubal disease. In the second part of the paper he gives an account of the fat and fat-crystals occurring in the ovary. Dr. T. Wardrop Griffith writes on the changes found in the bones in a case of Raynaud's disease, which took the form of interstitial absorption of the terminal phalanges with ankylosis of some of the joints.

New Inventions.

TONGUE SUTURE GUARD.

ANY surgeon who has had occasion to perform certain operations upon the mouth, and especially removal of the tongue, must have been faced with one serious difficulty—a difficulty not during the actual operation, but following it. Unless the base of the tongue is kept forward for some days, there is a serious danger that it may fall backwards over the epiglottis, and respiration become seriously embarrassed, if not imperilled. To avoid this it is the custom to pass silk sutures, one on each side, through the base of the tongue which, being left long, are brought out of the mouth and knotted over the ears. These sutures after a short time act as a string saw over the oral commissures, and produce great



irritation at these points; they may even, if left long enough, cause slight ulceration of the commissures, and thereby much discomfort to the patient during the time they need to remain. In order to obviate this most surgeons pass these threads through rubber tubes which project somewhat both inside and outside the mouth. These tubes certainly obviate the "string saw" action, but it is very difficult to retain them at the point where they are required unless ceaselessly watched. They slip along the retaining threads and therefore are often entirely inside or outside the mouth. In either case they cease to be a protection to the commissures, and should they slip inside may add, by their presence, considerably to the patient's discomfort. A reference to instrument catalogues fails to discover any alternative appliance, and therefore I have designed these mouth clips which fit over the commissure on each side and permit the threads to pass through a hole in the solid base which projects slightly between the lips. These cannot slip either into or out of the mouth.

They have been made admirably for me by Messrs. Weiss. Though intended for the average thickness of lip, since they are made of celluloid, they can be moulded to any size of lip after steeping in boiling water. In the use of these guards the combustible nature of celluloid must be borne in mind, and no naked light must be allowed near to the patient's mouth.

Manchester. E. STANMORE BISHOP, F.R.C.S. Eng.

WOODEN CASE FOR LIGATURE JAR CONTAINING IODINE SOLUTION.

THE boxwood cases with screw-down caps having repeatedly given me trouble, owing to the failure of the threads to bite, I have had made for me by Messrs. Allen and Hanburys, Limited, of 48, Wigmore-street, London, W., a case of soft wood, which has the advantage of lightness. The stopper is a plain plug with sloping slides which wedges into the neck of the case. This does away with the screw-down cap. Before placing the jar in the case a string should be tied round the neck of the jar, the ends of the string lying on the lid of the jar. Without such string there may be a little difficulty in lifting the jar out of the case.

C. HAMILTON WHITEFORD, M.R.C.S. Eng., L.R.C.P. Lond.

Plymouth.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 23, 1911.

Cerebro-spinal Fever and Acute Poliomyelitis.

IN THE LANCET last week we published from a local correspondent an account of outbreaks of "spotted fever" and acute poliomyelitis which have occurred recently in Devonshire and Cornwall. The epidemics have not yet ceased. At a meeting of the Devon county education committee on Sept. 8th Mr. G. ADKINS, the county medical officer, gave an account of the outbreak of acute poliomyelitis in various parts of the county. He stated that 25 schools had been closed, and that the disease was present in 12 out of the 52 districts of the county. There had been 80 cases altogether, and 16 deaths had occurred. A number of children were permanently paralysed. He also stated that three definite cases of "spotted fever" were known amongst those reported. As was obvious from our article on Sept. 16th some difficulty in the public mind appears to have arisen in diagnosis. Thus it is stated that at South Molton a child is supposed to have died from spotted fever on August 12th, and a boy, aged 15 years, taken ill on August 28th, died from acute poliomyelitis on August 30th. Until recent years very little attention has been drawn to epidemic cerebro-spinal meningitis, and still less to acute poliomyelitis. The use of synonyms has tended still further to confuse the diseases. Cerebro-spinal fever is also known as epidemic cerebro-spinal meningitis, malignant purpuric fever, petechial fever, and spotted fever; whilst acute poliomyelitis has also been designated acute anterior poliomyelitis and acute polio-encephalitis, a wealth of nomenclature that may well have led to confusion.

It is therefore of the highest importance that medical practitioners should have clear ideas as to the nature and principal symptoms of these two diseases. Cerebro-spinal fever, or epidemic cerebro-spinal meningitis, as its name indicates, is characterised pathologically by inflammation of the cerebro-spinal meninges, and the pathogenic micro-organism is now generally considered to be the diplococcus intracellularis of WEICHSELBAUM. Unfortunately, from the point of view of diagnosis, its clinical course shows great irregularity, the symptoms varying in different epidemics and in different cases of the same epidemic. The main phenomena are: fever of sudden onset, with much depression, pain in the head and neck, retraction of the head, and frequently delirium and coma; the temperature is irregular and variable, and a rash may or may not be present. The duration of the attack also varies greatly—from two or three days to three or four weeks or more. Attention has rightly been drawn to the cutaneous conditions. Herpes occurs with great frequency; but a petechial rash, which has given the name of "spotted fever" to the disease, is not at all constant, and cannot be relied upon for diagnosis. For the accurate recognition of the malady lumbar puncture is of considerable value, the cerebro-spinal fluid being examined for the causal organism. Joint affections are not uncommon, the joints being painful, red, and swollen; and some authors have described paralysis of the lower extremities which may persist for some time, but such a sequel is apparently rare. Acute poliomyelitis occurs usually among children, and is characterised by sudden complete loss of power in one or more limbs, followed by wasting of the paralysed muscles, and the growth of the bones of the affected limb is arrested. The distribution of the paralysis is very variable. Fever is usually present, the temperature rising to 101°, sometimes to 103° F. Pain may be complained of in the early stages, localised in the back, body, and limbs. The onset is sometimes very severe, the child becomes delirious and stuporous, and the head and back may be retracted, thus possibly giving rise to mistakes in diagnosis. The rapid occurrence of the paralysis and subsequent wasting of the limbs, however, serve to identify the complaint. The chief pathological changes are found in the grey matter of the anterior horns of the spinal cord. In the more severe cases there is a diffuse meningo-myelitis and encephalitis. The bacteriology of the complaint has not been definitely settled, although various observers have claimed to have isolated certain micro-organisms. Some authorities consider that the pathogenic agent belongs to the group of filterable and ultra-microscopic viruses.

The mode of spread of these diseases has been much discussed, and some interesting observations were mentioned in our article as the outcome of the observations of Mr. H. M. BODY, medical officer of health of South Molton. Cerebro-spinal fever seems not to be directly contagious, and is probably not transmitted by clothing or the excretions. It is rare to have more than one or two cases in a house, and in a city epidemic the distribution of the cases is quite irregular. With acute poliomyelitis the evidence of direct contagion is stronger, and numerous instances have been recorded in which children have contracted the disease after moving into tenements where other children had died from the affection. It has also been demonstrated by some observers that the virus of acute poliomyelitis is eliminated by the naso-pharyngeal mucosa. Mr. BODY has stated his opinion that it is possible for a healthy individual to act as carrier, and to convey the disease several miles to someone else. Dr. JOSEPH S. NEFF[1] made an interesting study of the cases of acute poliomyelitis occurring recently in Philadelphia. He believes the disease to be mildly contagious, but much less so than the other so-called children's diseases. He shows, however, that general sanitation, crowding, and housing conditions do not play such an important part in the spread of the disease as in other contagious diseases. In his memorandum he indicates by means of a map the location of cases in Philadelphia in the last epidemic of 1910, and as an interesting comparison he gives another map showing the location of cases of cerebro-spinal fever, which exhibit a similar distribution. In connexion with this disease, also, sanitary environment was demonstrated not to be a dominating factor in its etiology. We have only attempted

[1] International Clinics (1911), Twenty-first Series, vol. i. p. 70, et seq.

to give a very brief epitome of some of the characteristics of these two conditions, but we trust we have sufficiently indicated that it is important not to confuse the diagnosis, since cerebro-spinal fever and acute poliomyelitis are two distinct diseases with a different pathology and etiology.

Some Lessons from the Quincentenary of St. Andrews University.

THE committee in charge of these high celebrations may be congratulated on its complete success. To have assembled and entertained in a provincial town so numerous a company of guests, representing seats of learning and scientific associations from the Old World and the New, was no ordinary task. True, there were the guiding precedents of Edinburgh in 1884, of Glasgow in 1901, and of Aberdeen in 1906, but these were less prolific in warnings against failure than in successes to be equalled or surpassed, and it is to the credit of the smallest and least opulent of the four that she has even improved on the standard created by her sisters. The intellectual entertainment was in keeping with the social; and certainly the discourses of the Chancellor, Lord BALFOUR OF BURLEIGH; of the Lord Rector, Lord ROSEBERY; of the Vice-Chancellor, Principal Sir JAMES DONALDSON; and of the ex-Lord Rector, Mr. A. J. BALFOUR, were sufficient of themselves to have retrieved any shortcoming or misadventure in the arrangements. There was no excess of eulogy on the part of these orators; they were too experienced as men of the world, or as responsible holders of office, to betray the optimism so apt to appear on such occasions. The retrospect of Scotland's "Mater Studiorum," however honourable to her energy and perseverance in carrying out her ideal amid circumstances so adverse, was simply taken to encourage a further display of these qualities, and one and all of the said orators lost no opportunity of driving home the truth that with universities, as with individuals, the real test of merit is their power to progress.

Lord ROSEBERY, as the Mentor chosen by the students, did not fail to remind them of what has been a traditional defect in Scottish academic education—the want of thoroughness in mastering the subjects set for graduation—a defect described in characteristic fashion by Dr. JOHNSON as consisting in a taste of everything and a full meal of nothing. "A diluted omniscience" was Mr. FROUDE'S impeachment of the Scottish curriculum in Arts, his ideal being that of MARK PATTISON in his famous essay on "Oxford Studies," to teach the student "to know what knowledge of a subject means." This ideal has often been attained with exceptional approximation to success by the two great English Universities, Oxford and Cambridge, whose defaults in other directions are perfectly obvious, but whose practice has been that of restricting the subjects for graduation so as to admit of the students coming at least within measurable distance of knowing what mastery of them means. The practical result of the system has been to make Oxford and Cambridge the nursing mothers of pre-professional culture, insomuch that north of the Tweed, when an academic chair of Greek, of Latin, or of Mathematics, pure or applied, has to be filled, the electors frequently go to the two elder English Universities for the fittest candidate. A degree in Arts acquired by those attaining to the thorough standard implied in "the knowing what knowledge of a subject means" reacts for good on their subsequent profession, whether in the Church, or in the Law, or in Medicine. The last generation, indeed, has witnessed a departure from the old-fashioned thoroughness, but whether to the advantage of the graduate or to the formation of a more complete professional mind may well be doubted. Premature specialisation threatens to take the place of the former solidity—a specialisation *motivé* by the struggle for professional existence, and tested by examination, often competitive—the preparation for which has called into being the crammer, and the text-books so compiled as to enable students to score "marks," or, in familiar parlance, to get up the knowledge that pays. Science in tabloids is the outcome of the innovation, evoking from Lord ROSEBERY, in an effective passage of his brilliant address, the reproach of our being a "spoon-fed generation."

A point raised, this time by Mr. A. J. BALFOUR, in a speech which was in some respects the most striking of the series, was the function of science in discovering new sources of material energy in the more than probable event of our present resources failing. "We do not realise," he said, "the magnitude of the growth of knowledge that has taken place in the 90 years drawing to a conclusion." Our whole view of the world has been revolutionised in that time, and not only our whole view of science, but our whole view of history, of progress, and the development of mankind. With this progressive advance are we to assume, with the author of the "Novum Organum," that the moral world will not keep pace? Will there be no emergence of a better understanding between the members of the human family, a sense of brotherhood supplementing a sense of citizenship, and making for the peace of the world and the settlement of international differences, not by war, but by arbitration? The forecast seems to justify an answer in the affirmative, when

> "Mind and soul according well
> Will make one music,"

to which the march of humanity will keep time. For this, as for the goal at which all learning and all professional work ought to aim, the universities at home and abroad must combine and mobilise their energies until results, even provisional results, are attained as superior to those we now witness as were the semi-savage conditions of the university life of St. Andrews 500 years ago compared with those that have earned the congratulation of the world at her academic symposium so happily organised and carried out.

A Study of Psychopathic Heredity.

IN every department of scientific inquiry observation is inevitably influenced in greater or less degree by the doctrinal attitude of the observer, who cannot possibly avoid making an involuntary selection of data. However conscientious he may be in scrutinising the phenomena which he has to investigate, he will attach his mind to facts and aspects of facts which have an obvious bearing on the theory that he advocates, whether as supporting it or as contradicting it, while he will neglect or overlook other facts because

they have no such claim on his interest, and are therefore easily passed over as insignificant. But theories are often ephemeral and always imperfect, and the data which, being irrelevant to the theory of to-day, are ignored as of no account, may be vitally important to the theory of to-morrow, and their omission from the records of observation and experiment may in this way render valueless the result of years of laborious research. So true is this that from certain points of view it would hardly be a paradox to maintain that the value of a hypothesis is to be measured, less by the extent of the truth that it illuminates than by the small amount of the truth that it obscures; some bias it must inevitably give to observation, and what we have most insistently to require is that this bias shall be as slight as possible. If this test could be applied to the theories of heredity which divide the biological opinion of the day, probably its most hostile critics would admit that the doctrines associated with the name of MENDEL can claim to be free from this vice of distorting and narrowing our vision. For it is implicit in the Mendelian method, requiring as it does a high degree of minuteness of detail in the data on which it works, that it should collect its facts in a more complete form and with a more rigorous care for accuracy than can be expected, for instance, from the method of mass statistics, in which quantity is of more importance than quality. For this reason, and quite irrespective of the ultimate validity of the theory, we may anticipate that the application of the Mendelian analysis to the study of the heredity of mental disease will exercise a salutary influence in increasing the extent and precision of our knowledge of this most difficult and complex problem.

As evidence of what is already being done in this direction reference may be made to the excellent work which is being carried out by the Eugenics Record Office,[1] established last year in connexion with the Eugenics Section of the American Breeders' Association, and controlled by Dr. C. B. DAVENPORT. It is the object of this office to act as a clearing-house for data concerning "blood lines" and family traits in the United States; and so far as can be judged from the bulletins which it is issuing its organisation for these purposes is admirably planned. One of the specially commendable features of the method adopted by Professor DAVENPORT and his pupils is the employment of biologically trained investigators, technically known as "field workers," to collect the data for the pedigree charts. It is the business of these investigators to trace out all the living members of each family, to interview them, their friends and neighbours, and their medical attendants, and in this way to get a detailed and adequately controlled record of the family history. A large number of observations made under these stringent conditions have now been brought together, and it is claimed that they go to show that the facts of psychopathic heredity can be satisfactorily interpreted on Mendelian laws. This view has been most fully developed in a preliminary paper by Miss GERTRUDE CANNON and Dr. A. J. ROSANOFF, based on the family histories of 11 patients in the King's Park State Hospital, New York. The pedigrees include 35 distinct matings with a total of 221 offspring, and details have been obtained regarding practically every individual on the charts. For the purposes of the analysis of these details the writers assume that we may establish an absolute separation between normal individuals and individuals presenting what they call the "neuropathic make-up." This latter term appears to be of rather comprehensive character, for it is stated that "we find as manifestations of the neuropathic make-up in closely related persons cases of feeble-mindedness, convulsions in childhood from trivial causes or chronic epilepsy, cases of grave hysteria, various eccentricities, cases of dementia præcox, manic-depressive insanity, paranoiac conditions, involutional psychoses, and the like." This is a position which is somewhat open to criticism, for, though it will not, of course, be disputed that the different clinical varieties of degenerative insanity are probably fundamentally identical in nature, the inclusion in the neuropathic group of such ill-defined conditions as "feeble-mindedness" and "eccentricity" tends to make the limits of the group vague and arbitrary. Possibly this objection will be found to have less force when the pedigrees are accompanied by the detailed account of the conditions noted in each individual, whether assigned to the normal or to the psychopathic class. If this is so, and if we may accept the diagnoses made by the writers, then the pedigrees, so far as they go, will certainly bear out the contention that the insane taint does appear to be transmitted in a way that corresponds to the Mendelian laws. The first point to be noted when the pedigrees are examined in this light is that while there are a number of instances of neuropathic children born of normal parents, there is not a single instance of a normal child born of parents both of whom are neuropathic. The inference that a Mendelian would draw from this is, we believe, that if the condition underlying the various forms of the neuropathic make-up is a unit character, then it is recessive to normal. It can only be manifest, therefore, in an individual who has failed to inherit the dominant character of normality from either parent; and as such an individual cannot transmit what he does not possess, when mated with another neuropathic individual, he should have only neuropathic children. The normal individual, on the other hand, may have inherited normality from both parents, and, therefore, be pure-bred to that quality, in which case his mating with another pure-bred normal should yield only normal children; or his inheritance of normality may have been one-sided, and he may be carrying the psychopathic trait as a recessive, being thus hybrid with reference to the character of normality, and he should then be capable of transmitting the neuropathic make-up to his offspring. Now, not only are these general theoretical expectations realised in the pedigrees studied by Miss CANNON and Dr. ROSANOFF, but even the numerical proportions of normal and neuropathic offspring in the intermarriage of the several types must be allowed to approximate to what the distribution should be according to so-called Mendelian principles. Take, for instance, the mating of two normals, both of whom

[1] Eugenics Record Office, Cold Spring Harbour, N.Y., Bulletin No. 1, Heredity of Feeble-Mindedness, by Henry H. Goddard, Ph.D.; No. 2, the Study of Human Heredity, by C. B. Davenport, H. H. Laughlin, D. F. Weeks, M.D., E. R. Johnstone, and H. H. Goddard; No. 3, Preliminary Report of a Study of Heredity in Insanity in the Light of the Mendelian Laws, by Gertrude L. Cannon, A.M., and A. J. Rosanoff, M.D., 1911.

are hybrid as regards this character of normality. The pedigree charts show seven matings of this sort, with a total of 54 offspring. Theoretically, according to the principles, one-fourth of these children should be neuropathic, one-half normal but capable of transmitting the neuropathic make-up to their progeny, and the remaining one-fourth normal and not capable of so transmitting it. The actual results found are: 12 children neuropathic, 6 normal with neuropathic offspring, 10 normal with normal offspring, 18 normal without offspring, and 8 who died in childhood. This is a correspondence with Mendelian expectations which is sufficiently striking when it is borne in mind that the conditions with which we are dealing are such as must to some extent be susceptible to disturbance by environmental causes.

These results are remarkable, and their confirmation would be most desirable. If they stand further investigation they should exercise an influence on our views of insanity both in its medical and in its sociological aspects, so that it is reasonable to expect that the authors will lose no time in publishing the detailed notes of the cases included in their pedigree charts. We may then pretty confidently anticipate that there will be no lack of control observations to support or to invalidate their conclusions. If it should prove to be the case that the facts of insane heredity are susceptible of any Mendelian analysis, even though it be to a more limited extent than the authors of this interesting paper would have us believe, then the gain would, from a practical point of view, be very great. Hitherto, in dealing with this question, we have perforce been content to take our statistical material in the lump and to calculate from it a general average measure of the hereditary factor in insanity; we have had no grounds for formulating a definite opinion as to the likelihood of the transmission of an insane taint in individual cases. The Mendelian, on the other hand, if the promise of these investigations is made good, should be able to tell us with some approach to precision the probable results in each given instance of the mating of members of neuropathic stocks, and should thus be able to point the way to the elimination of the morbid trait. The prospect opened up by this new application of biological theory seems almost too roseate to be more than a mirage; but before we reject it as fantastic we may do well to consider the brilliant results which the same methods have won in other fields—results which, as Professor BATESON justly urged in his interesting address at the Portsmouth meeting of the British Association, should be an earnest of greater achievements to come. At all events, to return to the point at which we started, we have here a hypothesis of great importance, because it has the signal merit of stimulating accurate and minute observation in a field of inquiry in which hitherto a spirit of speculation has been chiefly dominant.

ROYAL DENTAL HOSPITAL OF LONDON.—The medical staff and lecturers of this hospital are giving a conversazione on Wednesday, Oct. 18th, at 8 P.M., at the Royal Institute Galleries, Princes Hall, Piccadilly. The occasion is the distribution of prizes by Mr. A. H. Gilkes, head master of Dulwich College.

Annotations.

"Ne quid nimis."

THE NATURAL HISTORY OF EPIDEMIC DIARRHŒA.

IN an interesting paper entitled "Season and Disease"[1] Dr. Owen H. Peters has studied the influence of seasonal variations of temperature and other meteorological conditions upon the epidemic rise and fall of epidemic diarrhœa and enteric fever. He showed that the time of the epidemic rise varies in different years, and that the time of attainment of summer temperatures also varies. A comparison of the two curves showed a very general correspondence between the early or late onset of the epidemic rise and the time of development of summer temperatures, but further observations demonstrated that it is not the mere arrival at a certain fixed temperature which is related to the date of the seasonal rise. From a study of these curves for a number of towns for certain periods of years it was suggested that the seasonal rise might be related to the cumulative effect of certain degrees of temperature extending over a certain time. As an example, it was found for London, Nottingham, and other large cities of the United Kingdom that after the arrival and continuance, without intermission, of the mean air temperature at 60° F. for a period of four or five weeks the main seasonal rise of diarrhœa mortality took place, the last fortnight or ten days of the period corresponding to the average duration of fatal attacks. On analysis of a considerable number of charts it was found that upon a rise to a favourable mean air temperature of 60° F. or a little below there is, firstly, an interval of two weeks during which no increase of diarrhœa cases occurs, or of four weeks before deaths, afterwards there is a slight rise, but an additional period of one to two weeks or a little more may elapse before the main rise develops. It was also evident that the influence of temperature upon the seasonal epidemicity of diarrhœa is a very important one, since failure of the summer temperatures to reach a certain height prevents it altogether, and, further, the epidemic mortality invariably comes to a standstill a fortnight after the weekly air temperatures have passed in a decided way below 50°. Dr. Peters has further studied this question in an interesting and careful examination[2] of the features of an outbreak of epidemic diarrhœa in certain districts of the town of Mansfield during the summer and autumn of 1908. Two areas of the town were systematically investigated by Dr. Peters himself, and the features of 390 separate attacks of the disease were investigated. On the basis of his observations he gives an exhaustive account of the conditions relating to the disease, and examines the various theories as to its causation and spread. He found that the incubation period was from six to 30 hours in length, but that it might possibly be longer. School attendance seemed to have little effect on the spread of infection, but the sharing of yards in common apparently had a marked influence upon the spread of infection. Dirtiness of the home increased the incidence of the disease, probably through carelessness in dealing with the motions, especially those of the young children. There was a comparatively low incidence during the first year of life, which was probably due to breast-feeding. It is important to notice that the attack age incidence was quite different from the mortality age incidence, which is far greater under

[1] Season and Disease: a Preliminary Study. By Owen H. Peters, M.D. Melb. Reprinted from the Proceedings of the Royal Society of Medicine.

[2] Observations upon the Natural History of Epidemic Diarrhœa, from the Journal of Hygiene, vol. x., No. 4, December, 1910.

the age of two years. Boiling the cow's milk given as food gave no protection, and it was found that the milk-supply played no part, unless of a general kind, in introducing diarrhœa into the home. The part played by personal infection, direct or indirect, by flies and the possible rôle of ground infection are carefully examined. Dr. Peters found that infection within the home was probably the commonest method of contracting the disease. The evidence was in favour of personal infection and fly carriage, and rather against ground infection. Comparing the diarrhœa curve with the curves of temperature and fly prevalence, it showed a delayed rise, variations with their variations, and a definite falling away from their declining curves. Careful analysis of these curves proved to be quite compatible with the theory of fly infection, but certain crucial tests which Dr. Peters outlines as necessary to establish this theory have still to be proved. This monograph is a thoughtful and valuable contribution to the literature of a devastating disease, and deserves careful consideration by all who are concerned in its study.

VACCINATION IN BURMA.

THE triennial report on vaccination in Burma, by Major H. S. Harriss, I.M.S., Superintendent-General of Vaccination, has recently been issued. The total number of vaccinations performed during the period under review was 1,167,673, a decrease of 102,280 on the preceding triennium. The percentage of successful primary vaccinations was 94·80, as compared with 91·05 in the previous triennium; that of successful revaccinations was 62·71, as against the previous 54·74. The average number of operations performed by each vaccinator was 1472, as compared with 1721 in the previous period, a decrease of 249. In Lower Burma the percentage of children successfully vaccinated was 25·56, as compared with 26·27 for the previous triennium. No comparison for Upper Burma can be instituted, as registration of births was introduced there only in 1907; but there is a steady decrease in the percentage of protected infants in Lower Burma, and in Upper Burma so far as figures are forthcoming. As regards the general protection of the population, during the present triennial period the protection per 1000 was 30·49, as compared with 33·16 in the previous triennium. There are three vaccine depôts in Burma—namely, Meiktila, Rangoon, and Lòimwe, the last-named having been opened during the past year. Special mention is made of the excellent work of Captain H. A. Dougan, I.M.S., in charge of the Meiktila depôt. The introduction of lanoline lymph for use in remote districts has been attended with marked success at Akyab, where it gave 94·2 success as against 84·4 with glycerine lymph. Tavoy and Mergui also recorded 94·2 per cent. success with lanoline lymph. Liebrich's lanoline in tins gives uniformly good results, provided the lanoline in the centre of the tin alone is used. The vaccination expenditure has risen to Rs.5,23,910, as compared with Rs.3,80,597 in the previous triennium, an increase of Rs.1,43,313. In view of the decrease in the total number of vaccinations performed these figures are recognised as unsatisfactory. This great increase of expenditure is ascribed to (*a*) increase in the number of native superintendents of vaccination and vaccinators; (*b*) the employment of a large number of peons in areas in which postal arrangements are defective; and (*c*) the increased pay of vaccinators for length of service. The three classes of officials concerned in vaccination are the vaccinators, the native superintendents, and the civil surgeons. The vaccinators are said to be mostly young inexperienced men in whom the Burmese have no trust; further, they are not reliable, for 17 have had to be dismissed during the season of 1910-11 for falsification, fraud, or acceptance of gratuities. The Lieutenant-Governor, in his resolution on the report, combats the idea that the percentage of men who had to be removed is high, and believes that the fault is largely due to lack of trustworthy and efficient supervision. He considers it doubtful whether the native superintendents, on a pay varying from Rs.25 to Rs.60 a month, can be trusted to exercise adequate supervision. On the other hand, civil surgeons with a large hospital at headquarters and several smaller hospitals at different stations, who are vice-presidents of municipalities, superintendents of jails, and sanitary officers for the whole district, to say nothing of doing a certain amount of private practice among European residents, cannot possibly find time to inspect thoroughly the work of the vaccinators. Major Harris, the Sanitary Commissioner, recommends the appointment to headquarters hospitals of assistant surgeons, which would allow the superintendent of vaccination to proceed on the prolonged tours necessary for the accomplishment of satisfactary inspection. He further recommends an increase in the number of Deputy Sanitary Commissioners to be constantly on tours of inspection. With regard to the native superintendents, he considers that it would be a better practice to promote old and trusty vaccinators to such posts, both as being more reliable than the young and inexperienced native superintendents at present appointed on passing an examination, and as offering hope of promotion to the vaccinators. He remarks on the general distrust, and in some cases even hostile attitude, to vaccination among the natives of Burma, who in large part prefer the practice of inoculation. (It is worthy of notice, in view of the letters in our columns on August 26th and Sept 9th, and the further letter of "E. A. A." in the current issue, that no reference is made in the report to tattooing as a substitute for vaccination, although the practice of inoculation is condemned.) This practice was rendered illegal by the Prohibition of Inoculation Act, 1908, which, however, is in force in only two districts; and the Sanitary Commissioner considers its extension to be urgently required, seeing that out of 20 districts reporting small-pox epidemics 11 reported inoculation, and in 6 epidemics were said to be the direct result thereof. The Burma Vaccination Act of 1909 gives power to health officers to enforce vaccination in certain circumstances in Rangoon and in other places where it may be urgently required, and also provides for the vaccination of coolies. To ensure the vaccination of all newly born children a special combined birth and vaccination register has been introduced.

STRANGULATED HERNIA WITHOUT VOMITING.

VOMITING, at first of stomach contents and later of fæcal material, is usually regarded as an essential symptom of strangulated hernia. In his "Clinical Lectures" Sir James Paget says: "If I were asked which of the signs of strangulation I would most rely on as commanding operation I would certainly say the vomiting." However, in his "System of Surgery" Sir Frederick Treves is not quite so dogmatic, for he says: "Vomiting appears early, is a marked and *almost* constant symptom." In the *Journal of the American Medical Association* of June 24th Dr. James R. Judd has reported a case of strangulated hernia which was remarkable in the fact that vomiting was entirely absent. The patient, a Chinaman, aged 64 years, was admitted into hospital. He had been troubled for 15 years with an inguinal hernia which had gradually enlarged. On several occasions he had difficulty in reducing it, but always succeeded in the end. He never wore a truss. Four days before admission the tumour increased in size and he could not reduce it. He had suffered considerable pain and the bowels had acted once. According to his statement, which was corroborated

by all his friends and relatives, he did not vomit at all. On examination he was a well-nourished man with a pulse of 120, a temperature of 101°F., and embarrassed respiration. The abdomen was distended and tympanitic. In the right inguinal region was a tense, tender swelling which involved the right side of the scrotum. The overlying skin was reddened and œdematous, and there was no impulse on coughing. The usual incision revealed a tense sac adherent to the scrotum and containing a loop of gangrenous intestine. The sac was filled with fluid fæces and gas, and fæces were seen escaping from two openings in the bowel. The sac was irrigated, the constriction relieved, and the gangrenous bowel wrapped in moist gauze. The loop was then brought well outside the abdomen and the distended bowel divided at a safe distance from the gangrenous area. Much fluid fæces and gas escaped. Twelve centimetres of intestine, with a wedge-shaped piece of mesentery, were removed, and end-to-end anastomosis was performed. The spermatic cord was found to be flattened, and its vessel did not pulsate. The right testis was greenish-black and did not bleed on incision. The cord was therefore ligatured and removed with the testis. The sac, which was much thickened and adherent, was removed and the neck sutured at the internal ring. The inguinal canal was closed in the usual manner, and drainage was provided at the lowest end of the wound. Except for slight discharge from the drainage tract the wound healed by primary union, and recovery was uneventful. The gangrenous condition of the testicle is a very unusual condition in strangulated hernia, and was evidently due to pressure of the sac on the cord.

AN OUTBREAK OF CHANCRES OF THE LIP FROM KISSING.

THE transmission of syphilis to the "innocent" by kissing is too well known, but transmission to a number of persons at the same time has seldom been recorded. In the *Journal of the American Medical Association* of Sept. 2nd Dr. J. F. Schamberg of Philadelphia has reported the following distressing occurrence, which should serve as a warning against kissing games. A coterie of young men and women of ages varying from 16 to 22 years gave a benefit minstrel performance, which was followed by a banquet at which juvenile kissing games were played. One of the participants, a man, aged 22, had a sore on the lip. Six young women kissed by him developed chancres of the lip. A young man also developed a chancre apparently from kissing one of the young women on whom the virus had been deposited. In addition, a young woman kissed by the offender at another social function developed chancre of the lip. The matter was brought before the Department of Health of Philadelphia by a physician under whose care three of the patients came, and Dr. Schamberg was requested to investigate it. The offender was identified and said that he noticed a sore on the left side of the lower lip on Feb. 12th, 1911, and on March 3rd consulted a physician, who did not inform him of its nature. However, on being interrogated, the physician declared that he advised the young man to take all precautions. On March 4th the kissing games took place. On examination on June 20th he presented the remains of a chancre of the lower lip, tonsillar ulceration with mucous patches, and a maculo-papular eruption. There was no law in the State giving the health authorities a right to deprive a syphilitic subject of his liberty, but there was a law, nearly a century old, empowering them to quarantine a person known to be spreading contagious disease. With his consent the patient was taken to the municipal hospital and given an injection of salvarsan. If he had refused he would have been quarantined. Five or six other young women were kissed by him at the first function without contracting syphilis. Of those who developed chancres four had no knowledge of any abrasion on the lips previously, one had a fissured lip, and one was in the habit of biting her lips. Four of the chancres were on the lower lip, two on the upper, and in one case both lips were involved. The source of the chancre in the young man could not be determined, but as he was given to frequent promiscuous kissing it was presumed the disease was contracted in this way. This unfortunate occurrence, as Dr. Schamberg observes, teaches several lessons. It shows the importance of teaching the public the dangers of promiscuous kissing and the great responsibility placed on medical men of safeguarding the public from their luetic patients by giving due warning. We would add that it forms an argument for bringing venereal diseases under sanitary control.

SANITATION AND PLAGUE.

THE view which has been generally held as to the relation of insanitary conditions to the prevalence of plague has generally been that they had no direct effect upon the diffusion of the disease, except in so far as they might favour the infestation of premises by rats. To this opinion there are, of course, dissentients, who maintain that the first step towards the prevention of the spread of plague is the improvement of the general sanitary circumstances of the house, the village, the town, or the district. In THE LANCET of Sept. 16th we drew attention to the anomalies of plague incidence in India, and particularly to the remarkable freedom from plague epidemics experienced by the province of Eastern Bengal and Assam, the precise causes for which were apparently not known. Since commenting on this subject we have had the opportunity of reading the recently issued annual report for 1910 of Lieutenant-Colonel E. C. Hare, I.M.S., Sanitary Commissioner for that province. In his report reference is made to the well-known immunity of Eastern Bengal from plague, and in this connexion the Sanitary Commissioner refers to an inquiry conducted during 1910 by Captain J. C. G. Kunhardt, I.M.S., on behalf of the Commission for the Investigation of Plague in India, who had visited the province. The full report of this officer has not yet been published, but it is stated he had come to the conclusion, as a result of observations made in Dacca, Chittagong, and other places, that the towns in Eastern Bengal were infested by the rat (Mus rattus) to a much less extent than the towns in other parts of India, and that the reason for this appeared to be due in part to the construction of the dwellings, some, on the one hand, being built more solidly with cement plinths and roofs made of stone slabs, while, on the other hand, some were constructed of more flimsy materials, with walls of bamboo matting and roofs of corrugated iron or light thatch, in any case affording little shelter for rats. The houses, too, were found by Captain Kunhardt to be better lighted, and they were kept in better repair. The people themselves also were more cleanly in their habits, and they did not allow so much rubbish or refuse to collect around their homes. In a word, there seems to be a higher standard of sanitation in Eastern Bengal than in some other parts of India. Whether this is only a part of the explanation of the province's immunity from plague it is not possible to say until the Commission's full report has been received. But this evidence corroborates what has long ago been suggested by some sanitarians in India. In this connexion we may be allowed to quote a passage from the annual report for the year 1908 written by Major C. E. Williams, I.M.S., Sanitary Commissioner for Burma. In protesting against the ignoring of the improvement of general sanitary conditions as conducing to the prevention of plague, and also protesting against all the efforts being concentrated solely upon the

destruction of rats and fleas, Major Williams went on to say that many district medical officers had, in consequence of the advice they had received from the Plague Commission, "neglected the improvement of the general sanitary conditions to follow the *ignis fatuus* of a pulicide propaganda, in an attempt to break the chain of infection at its apparently feeblest link. The practical sanitarian, however, cannot fail to recognise that for him the real source of predisposition of plague epidemics so conspicuous among Asiatic races lies in the insanitary conditions among which the poorer classes live, which foster the prevalence of rats and insect vermin, and that a true prophylaxis is to be found in the amelioration of these conditions."

TUBERCULOUS PLEURISY DUE TO EMBOLISM.

UNDER the somewhat vague title "Zur Kenntnis der Lungentuberkulose" Professor Aufrecht has reported in *Berliner Klinische Wochenschrift*, No. 30, 1911, an interesting case which throws light on the etiology of tuberculous pleurisy. The patient, a man aged 60, consulted him for an enlargement of the cervical glands, which had grown from the size of a hazel nut to that of a child's fist in the course of six months. Excision was advised, but refused. The patient went elsewhere and his glands were massaged. Shortly afterwards he was seized with violent pain in the right side of the chest, and dulness was detected over the middle lobe of the right lung. He now consented to extirpation of his glands, which were found to be almost completely caseous and to contain numerous tubercle bacilli. The dulness over the lung continued, and a serous exudate was detected in the right pleural cavity. After eight months' illness the patient died. At the necropsy 200 c.c. of cloudy fluid were found in the right pleural cavity. The middle lobe of the right lung was larger than usual, and it was completely converted into a yellowish-grey, cheesy mass. The massage had evidently displaced from the cervical glands a thrombus which had been carried to a branch of the pulmonary artery, supplying the middle lobe of the right lung. The simultaneous occurrence of pleurisy and pulmonary tuberculosis may thus be traced to an embolus containing tubercle bacilli and causing an infarct of the lung. Such an embolus is probably more often derived from mediastinal than from cervical glands, as the former are oftener tuberculous than the latter. Professor Aufrecht concludes that this origin of tuberculous pleurisy is not infrequent, especially in such cases which, shortly after the onset of pleurisy, present physical signs of pulmonary disease. He therefore advises a guarded prognosis in early pleurisy which may be the outward and visible sign of deep-seated and acute pulmonary tuberculosis.

POETRY AND SCABIES.

SCABIES is hardly a complaint which one would expect to be associated closely with the Muses, but such apparently is not always the case. Dr. Haldin Davis sends us the following interesting note on the subject: "In the year 1788 a young maiden lady, by name Weissel, the daughter of the Procurator of the University of Marburg, fell ill with an affection of the skin which her medical attendant, who was, as she alleges, one of the most skilful of physicians, diagnosed as 'scabies humida.' Whether this affection is identical with the scabies of modern times is more than doubtful, for in those days the term scabies was applied to a number of different conditions, including eczema and syphilis (scabies hispanica). Notwithstanding the attentions of her physician this lady's illness lasted no less than six months, during which time she was reduced to the lowest ebb of misery and distress. She records that during the entire period she was almost wholly without sleep. Finally, she sought relief in poetry, and six of her effusions were collected by an unknown admirer, and published in the 113th number of the *Political and Philosophical Magazine* (*Staats und Gelehrten-Zeitung*) of the Principality of Hesse-Cassel. Thence one has been rescued from obscurity and republished in the *Deutsche Medizinische Wochenschrift* for August 24th. It is entitled, 'Trost eines guten Gewissens auf dem Krankenbette,' which is, being interpreted, 'The Consolation of a Good Conscience on the Sick-bed.' It is not without poetical merit. After six months' suffering she sank into a sort of trance, and on awaking from this implored the doctor to adopt another line of treatment, however dangerous it might be. He acceded to her wishes, and his efforts were so speedily crowned with success that within a month she had fully recovered. Dr. Schelenz, who has made this contribution to the history of medicine and rescued a poetess from oblivion, is of opinion that she suffered from an eczema of purely nervous origin. The subsequent history of the poetess presents few points of interest. She married in 1792, had nine children, and the only other poems which she published were dedicated to her son in 1814, at that time a 17-year-old officer fighting in the Napoleonic wars."

DILATATION OF THE COLON AS A TEST FOR CHRONIC APPENDICITIS.

THAT chronic appendicitis may manifest itself as persistent dyspepsia of various forms, and therefore escape diagnosis, has been fully recognised. In the *American Journal of the Medical Sciences* for July Dr. W. A. Bastedo has called attention to a test which he has found of great value in the diagnosis of chronic appendicitis, and which has served him when all other methods failed. A colon tube is passed for a distance of 11 or 12 inches and air is injected through it by means of an indiarubber bulb. If as the colon distends pain and tenderness become apparent at McBurney's point there is appendicitis. Of course, this test should not be used in an acute case. Dr. Bastedo thinks that it may prove useful in any persistent abdominal trouble or digestive disturbance for which no cause can be found. In cases of suspected appendicitis in which the diagnosis was doubtful and he hesitated to advise operation because tenderness at McBurney's point was elicited only by very deep pressure, or because there was similar tenderness at other points in the abdomen, dilatation frequently caused disappearance of tenderness at all places except at McBurney's point, where it was intensified. Finally, dilatation enabled the differential diagnosis to be made between appendicitis and right side pelvic trouble in young women in whom vaginal examination was impossible except under ether. The following are some examples. A painter had attacks of abdominal pain, without nausea or vomiting, for 18 months. They became more numerous and in the last he had to lie down for one afternoon. He was told that he had painter's colic. The pain was generally just above the umbilicus or high up beneath the ribs. There was no line on the gums. On dilatation of the colon a small umbilical hernia appeared and pain was felt at two spots—McBurney's point and just below the umbilicus. Operation for the hernia and appendicitis was advised, but, as the diagnosis was not confirmed by others, was declined, and the patient was treated for three months for plumbism and indigestion. The attacks increased and became more localised in the appendix region. The dilatation test was again performed and proved positive. On operation a chronically inflamed appendix covered by veil-like adhesions, which extended to the hernial opening, was found. The appendix was removed and the hernia opening closed, and the attacks ceased. In a second case a physician had in two years five attacks of severe abdominal pain with prostration and vomiting. The pain was diffuse, never

localised, and lasted about a day; the temperature never rose above 99° F., and the pulse was normal or slow. A positive diagnosis was not made, but appendicitis was suggested. Two days after the last attack, which was so severe as to require the administration of morphia, Dr. Bastedo saw him. Slight tenderness could be elicited on very deep pressure at McBurney's point, but on dilating the colon acute pain appeared in the appendix region as well as tenderness at the point. Operation revealed a chronically inflamed appendix with a constriction close to the cæcum. There has been no attack since the operation—an interval of almost a year. In a third case, a woman, aged 24 years, suffering from mitral stenosis, had several attacks of cramp-like pain in the right iliac region. Twice or thrice this pain came on at the menstrual periods, but it also occurred at other times. Vaginal examination was not feasible, so the colon was dilated. At once dull pain was felt over the whole right lower segment of the abdomen, extending from McBurney's point to Poupart's ligament and to the middle line. Tenderness was slight and was most marked about half-way between McBurney's point and the symphysis pubis. Operation revealed a right ovarian cyst and normal appendix. Dr. Bastedo has used this test for four years and has had no case in which it was positive and the operation negative. But in two cases the test was negative and a typical attack of appendicitis followed six months later, and the test was presumably at fault. In several cases in the early days surgeons operated when the test was negative and in all a normal appendix was found.

TREATMENT OF TUBERCULOUS PERITONITIS BY INCISION.

TUBERCULOUS peritonitis is by no means a rare disease, for it is found in about 5 per cent. of all cases dying from tuberculosis, but it is rarer for it to form the sole or even the most conspicuous manifestation of the action of the tubercle bacillus. That it is possible for cases to recover from the disease without operation is certain, and Dr. H. P. Hawkins found from the examination of 100 consecutive cases at St. Thomas's Hospital that, though the mortality is less in cases treated by operation than in those treated without operation, the difference is slight. Judging by the results of published cases which had been submitted to operation, improvement or cure occurs in three-quarters of the whole number; but there can be no doubt that these figures are untrustworthy, for even in cases apparently completely cured relapses may occur, and, further, a successful case is far more likely to be reported than one which has ended fatally. The first instance of the employment of laparotomy in tuberculous peritonitis resulting in recovery occurred in the practice of Sir Spencer Wells; the abdomen was opened under the impression that an ovarian cyst was present, but tuberculous peritonitis was found, and the abdomen was closed. To the surprise of all who saw the case, the patient recovered, and she was alive and well at least 25 years later. Since this first success laparotomy has been performed many times for tuberculous peritonitis, and the best results have certainly been obtained in cases in which much exudation is present, and when there are few adhesions. Perhaps it will not be far from the truth to say that 50 per cent. of cases where such conditions prevail will recover after laparotomy. The results are not nearly so good if there be little or no exudation and many adhesions are present; yet recovery in such cases may occur, as in a case reported by a correspondent in the present number of THE LANCET (p. 916), that of a boy, 14 years old, suffering from tuberculous peritonitis, who was almost moribund, but who recovered rapidly after a small abdominal incision had been made. There is no little risk in cases with many adhesions that any attempt to break down any of them may give rise to a fæcal fistula, for the bowel wall is often greatly thinned, or general suppuration may be set up. The explanation of the improvement which follows laparotomy in tuberculous peritonitis is very difficult. Lauenstein suggested light as the curative agent, but the exposure is so short that this explanation cannot be accepted. When free fluid is evacuated by the operation it may well be that a medium favourable for the growth of the bacillus has been removed, but this explanation will not serve for those cases in which no exudation is present. Instances have occurred in which the abdomen has been opened for tuberculous peritonitis, and many tubercles have been seen, yet when a laparotomy has been performed a year later for some other cause, such as for cure of a ventral hernia resulting from the first operation, not a single tubercle has been visible on the peritoneum; therefore the tubercles really disappear. The only suggestions as to the cause that can be put forward with our present knowledge are either that somehow the balance of forces within the abdomen has been disturbed so as to make it unsuitable for the tubercle bacillus, which is somewhat difficult to grow, or perhaps the disturbance produced leads to the production of an auto-vaccine which immunises the patient. Be the explanation what it may, there can be no doubt as to the fact that in a large proportion of the cases recovery does ensue after a laparotomy has been performed, but the least satisfactory cases are those without exudation and with many adhesions, as in the case reported by our correspondent, who is to be congratulated on the success of his treatment.

HEMIHYPERIDROSIS AND PARADOXICAL SECRETION OF SWEAT.

IN the *Wiener Medizinische Wochenschrift* of April 22nd Dr. Wilhelm Presslich describes a case of disturbance of sweat secretion which presents certain unusual features. The patient was a member of the medical profession who came of a very neuropathic stock (his mother being a typical psychasthenic) and who had suffered at intervals from attacks of acute depression, associated with facial neuralgia. When he was a medical student his attention was called to the fact that during exertion he perspired only on the right side of the face, the left remaining quite dry. In the course of the next few years he observed that this area of unilateral sweating had gradually spread so as to include the right side of the neck, the shoulder, and both anterior and posterior aspects of the trunk to the level of the nipple. The condition remained unaltered during the next ten years. When the patient came under the notice of Dr. Presslich it was seen that even during rest and at a normal room temperature the right side of the face and upper part of the trunk were moist, while the remaining part of the body and the left side of the face were quite dry. With muscular exertion the affected areas "ran" with perspiration, but the patient did not feel hot, nor on palpation was the skin temperature raised. Only a moderate amount of perspiration was noticeable on the normal areas during violent exertion. The most curious feature of the case, however, consisted in a paradoxical sweat secretion which took place under the following conditions. On cold, misty days, as soon as the patient went out of doors the left side of the face and body seemed to become "stiff," and immediately thereafter it was covered with innumerable fine sweat-drops which usually disappeared after about a quarter of an hour. Similarly, by inhaling ammonia vapour or by eating any pungent substance such as horse-radish or mustard—indeed, even by merely thinking of such substances—the patient was able to make this paradoxical left-sided sweat secretion reappear, while the otherwise constantly moist right side became at the same time dry. There is

reason to suppose that these remarkable defects of sweat function are associated with impairment of the action of the sympathetic system, presumably medullary in origin. Cases have been described where organic disease of the medulla has been accompanied by disturbances of sweat secretion over the face and elsewhere, and in the present instance analogous defects were noted in the apparent absence of organic disease. In lesions of the medulla we may expect to find impairment of function of the vaso-motor and the secretory systems, which may or may not be associated with symptoms referable to impairment of the cervical sympathetic system.

PUERPERAL INFECTION WITH BACILLUS INFLUENZÆ.

THE application of bacteriological study to clinical medicine has done much in the past 20 years to modify our ideas as to the limits of the pathogenicity of various bacteria. We have learnt to regard the pneumococcal infection as a bacteriæmia, even when its pathogenic effects are apparently limited to the lung; and more recently still attention has been drawn to the frequency with which the bacillus coli communis becomes the cause of a septicæmia. One of the latest and most important additions to this increasing list of micro-organisms capable of causing deep-seated disease after transmission through the blood stream is the bacillus influenzæ. Various observers have been able to demonstrate it as the cause of meningitis and also of malignant endocarditis, usually of the "chronic infective" type; and now an interesting observation made by Dr. William Thalhimer in the *Johns Hopkins Hospital Bulletin* for August suggests that the genital tract may, in women at all events, be a port of entry for this bacillus. The patient, a woman 31 years of age, was seized with abdominal pain three days after a normal second confinement; the temperature was raised and there were several rigors. The following day she was admitted to hospital; at this date the temperature was 105°, but no pelvic lesion was discoverable. For some days after this the temperature ran an irregular course, and a mass was to be felt in the right broad ligament; but in less than a month the patient had so far recovered that she was able to leave the hospital. A blood culture was negative, but two types of organism, a small bacillus and a streptococcus, grew on agar inoculated from the interior of the uterus. The bacillus, which was the predominant micro-organism, proved in subculture to be Pfeiffer's bacillus influenzæ. The main points in the history of the patient which were of any suggestive value were an account of an attack, which was probably influenza, at the age of 16, and the fact that a year previously her husband was known to have had gonococcal epididymitis. The sole record of a case at all similar to this one, was that of a woman with bilateral non-puerperal salpingitis, suppurative on one side and serous on the other. Kisksult, who reported this case, found the influenza bacillus in the inflammatory exudation in both tubes. This patient also gave a history of an influenzal attack eight or nine years previously. In Dr. Thalhimer's case the bacillus was identified as that of Pfeiffer by two bacteriologists independently of each other.

Sir Donald MacAlister, chairman of the Pharmacopœia Committee of the General Medical Council, informs us that the committee, having resolved to proceed to the production of a new issue of the British Pharmacopœia, has appointed two editors to supervise the preparation of the work under their direction. The joint editors are Dr. Nestor I. Tirard, Professor of Medicine, King's College, London, who has been for many years the secretary of the committee, and Mr. Henry G. Greenish, F.I.C., F.L.S., Professor of Pharmaceutics, Pharmaceutical Society of Great Britain, who has acted as secretary of the Committee of Reference in Pharmacy.

THE Secretary of State for the Colonies has appointed Sir Ronald Ross, K.C.B., F.R.S., Professor of Tropical Medicine in the University of Liverpool, to be a member of the Advisory Medical and Sanitary Committee for Tropical Africa in succession to the late Sir Rubert Boyce.

WE regret to announce the death, in his eighty-third year, of Dr. Frederick William Pavy, M.D., F.R.S., LL.D., which occurred on Sept. 19th last, at his residence, 35, Grosvenor-street, London. A further notice will appear in our columns of this most distinguished physician and chemist.

THE ROYAL COMMISSION ON HUMAN AND ANIMAL TUBERCULOSIS.[1]

APPENDIX: VOLUMES I. AND II.

THE Final Report of the Royal Commission on Human and Animal Tuberculosis was published, it will be remembered, about two months ago,[2] and the first two volumes of the second part of, or appendix to, the report have now appeared. The first of these volumes describes the investigation of viruses obtained from cases of human tuberculosis other than lupus; the second describes the investigation of viruses obtained from cases of lupus; and both are from the pen of Dr. A. Stanley Griffith. A third volume, dealing with further work on old viruses, left incomplete when the second interim report was published,[3] with additional work on two of the recent viruses, and with the excretion of tubercle bacilli in the milk of animals experimentally inoculated, is announced. The investigations were undertaken at Blythwood, and have been proceeding since 1907.

In the following account of these two reports we have given Dr. Griffith's summaries substantially, for, while they are models of condensation, they indicate the extensive scope of the work for which he has been responsible and the precautions with which that work has been undertaken.

Volume I. Viruses from Cases other than Lupus.

Volume I., in recording the results of the investigation of the new cases of human tuberculosis other than lupus, includes a full account of the cultural and pathogenic properties of the tubercle bacilli isolated from them. First comes an account of the different viruses investigated, stating the type or types of bacilli isolated in each group of cases; second, a comparative study of the properties, cultural and pathogenic, of the two types of tubercle bacilli isolated; and third, the results of the experiments carried out to ascertain whether any of the properties of the tubercle bacilli isolated could be altered by residence in the bodies of mammals or birds.

The more detailed part of the report begins with a table of origins in which for each case, grouped according to the kind of tuberculosis, there are given a brief abstract of the clinical history and post-mortem notes of the patient and a statement as to the type of bacillus isolated. Fuller clinical and post-mortem notes are followed by summaries of the experimental results with the bacilli isolated, viruses here being arranged in numerical order. After these come the tabular summaries of the inoculation experiments performed on the different species of animals; the experiments with each species are tabulated separately and divided into groups according to the properties of the virus. Lastly, there are the full post-mortem notes of the larger animals grouped together according to the virus used, illustrated by graphic charts. A series of 67 photographs illustrating the types of growth of the cultures is appended. The pictorial charts exhibiting the lesions produced in calves, pigs, and

[1] Final Report of the Royal Commission appointed to enquire into the Relation of Human and Animal Tuberculosis. Part II. Appendix. Vol. I., Investigation of Viruses obtained from Cases of Human Tuberculosis other than Lupus. Vol. II., Investigation of Viruses obtained from Cases of Lupus. A. Stanley Griffith. London, Wyman and Sons. Price 5s. 3d. each. [2] THE LANCET, July 15th, p. 166.
[3] THE LANCET, Feb. 9th, 1907, pp. 368, 380.

goats are to be included with other similar charts in a supplementary volume.

The original material consisted of tuberculous tissues, including fluids and pus, obtained after death, or by operation from 25 persons, and sputum from 30 persons presenting clinical signs of pulmonary tuberculosis. The list includes 10 cases of alimentary tuberculosis in children, 1 case of alimentary tuberculosis in an adult, 3 cases of tuberculous meningitis, 2 cases of general miliary tuberculosis (origin uncertain), 4 cases of pulmonary tuberculosis, 1 case of tuberculosis of the suprarenal bodies, 3 cases of tuberculosis of bones, 1 case of tuberculosis of a joint, and sputum from 30 cases of pulmonary tuberculosis.

It will be seen, therefore, that the subjects were of various ages, and that most of the chief varieties of tuberculosis were represented. The nature of the tuberculosis was in each case ascertained by cultures from the tuberculous lesions, and the original material was in every case inoculated into guinea-pigs for the purpose of obtaining cultures, and was occasionally tested for virulence on rabbits. As different types of tubercle bacilli are found in the same tuberculous lesion or in different lesions in the same subject, the properties of bacilli from lesions in different parts of the body must be ascertained before the disease can be rightly assigned to a particular type of bacillus. Detailed accounts are given of the methods employed to determine these properties and to estimate doses for inoculation.

The results of the investigation of the cases of primary alimentary tuberculosis in children are of particular importance. Of the 10 cases, varying in age from 7 months to 8 years and 7 months, in 7 the portals of entry of the bacilli were in the mucous membrane of the intestines, in 1 the point of entry was somewhere in the pharynx, and the other 2 were infected simultaneously from pharynx and intestine. Two of the children died of general tuberculosis, and in one of these there were tubercles on the meninges; three died of tuberculous meningitis, two of tuberculous peritonitis, and one of multiple stricture of the gut (tuberculous); the remaining two died from intercurrent disorders, and the tuberculous lesions were found at the post-mortem examination. Dr. Stanley Griffith is here careful to remark that in every case in which the disease was generalised cultures were made not only from the glands nearest the presumed sites of entry of the bacilli, but also from one or more of the remote lesions. The examination of a number of different strains from the same patient is specially important in the case of children because of their liability to infection with the bovine as well as with the human tubercle bacillus. In none of these cases, however, was there any evidence of a mixed or a double infection, the cultures derived from metastatic lesions being identical with those from the glands nearest the portal of entry of the bacilli.

The bacilli isolated from the ten cases were found to fall into two groups: (1) those which grew luxuriantly on artificial media and had a low virulence for the rabbit; and (2) those which grew less freely but had a high virulence for the rabbit and the calf. The second group were indistinguishable from the bacilli associated with bovine tuberculosis. Bacilli with the properties of the bovine tubercle bacillus were obtained from four children, all of whom died as a result of tuberculous infection. Dr. Griffith calls attention to the fact that these four cases furnish additional evidence to that brought forward in the second interim report that the bovine tubercle bacillus can when ingested produce severe tuberculosis in children and cause death either through extensive local changes or generalisation of the disease. In the series of 20 cases of mesenteric gland tuberculosis reported on in their interim report, 11 yielded cultures of the bovine tubercle bacillus. The other six cases of alimentary tuberculosis yielded cultures of the opposite type—i.e., bacilli which grew luxuriantly on glycerine media and showed low virulence for the rabbit. Two of the children, aged 7 months and 1¾ years, died of tuberculous meningitis; one, aged 7 years, of tuberculous peritonitis; and two, aged 9 and 10 months, of tuberculous meningitis and general tuberculosis; the remaining one, aged 4 years, died from pleurisy and pericarditis, the tuberculous lesions being found at the necropsy. The tuberculous lesions in these children presented no naked-eye features by which they could be distinguished from lesions produced in children by bovine tubercle bacilli. The number of bacilli in the lesions also afforded no certain indication of the kind of organism responsible for the disease. The only way, therefore, of ascertaining definitely which of the two kinds of bacilli is responsible for a tuberculous lesion is to isolate cultures and determine their cultural characters and virulence.

These ten cases bring the number of cases of alimentary tuberculosis in children under 12 years of age, in which the material was obtained after death, and which have been investigated by the Commission, up to 28; 14 of these cases have been shown to be due to the bovine tubercle bacillus, and 14 to the human tubercle bacillus. Interesting tables enable a comparison to be made between the two groups, when these important differences are revealed: (1) In the cases due to the human tubercle bacillus the generalised disease is more severe and widespread than in those due to the bovine tubercle bacillus; and (2) the bronchial glands are much more frequently and more severely affected by the human tubercle bacillus than by the bovine tubercle bacillus. A third and minor difference is the difference in average age at death. Taking only those which died of uncomplicated tuberculosis, it is found that the average age of the children which died of a human infection is 2·4 years, while that of the children which died of a bovine infection is 3·3 years.

One case of primary alimentary tuberculosis in an adult subject was investigated, a man, aged 70, who died from pneumonia. At the post-mortem examination caseous mesenteric and retro-peritoneal glands were found and there was no sign of tuberculosis elsewhere. Two strains of culture were obtained, one from the mesenteric glands through the guinea-pig, the other from a retro-peritoneal gland direct. On artificial media the two strains exhibited identical and luxuriant cultural characters, but they differed, however, in their virulence for the rabbit as the mesenteric gland strain produced in this animal, when inoculated subcutaneously, very slight retrogressive tuberculosis, while the retro-peritoneal gland strain produced in rabbits and calves inoculated subcutaneously general progressive tuberculosis.

We must refer our readers to the text of these volumes for accounts of the detailed work. Dr. Stanley Griffith summarises the lessons to be learnt from the first volume in the following clear terms:—

"In those cases of generalised tuberculosis caused by bacilli which had entered the body by way of the alimentary tract cultures were isolated not only from the glands nearest the points of entry of the bacilli but also from the disseminated lesions, and in several of the other cases in which there were lesions in different parts of the body more than one strain has been isolated and separately investigated. In two instances human and bovine tubercle bacilli were isolated from the same patient, and these were in each instance associated together in the same lesion, in one case a caseous retro-peritoneal gland in an old man aged 70 years who died of pneumonia and showed tuberculosis limited to the glands draining the small intestine, in the other a caseous bronchial gland in a child aged 4½ years who died of general tuberculosis. From other lesions in these two patients human tubercle bacilli only were isolated. The cultures isolated from the other cases fall readily into one or other of two groups, one containing bacilli indistinguishable from bovine tubercle bacilli, the other bacilli (human tubercle bacilli) which grow more luxuriantly and have lower virulence for the rabbit and much lower virulence for the calf than the bovine tubercle bacillus.

Bovine tubercle bacilli were isolated from four of the ten cases of alimentary tuberculosis in children, and from two of the cases of pulmonary tuberculosis (sputum). The four children in question died as a result of infection with bovine tubercle bacilli, the cause of death in one case being general tuberculosis, in another tuberculous meningitis, in another tuberculous peritonitis, and in the fourth stricture of the intestines following tuberculous ulceration; the ages of the children were 1, 2, 4, and 8½ years. The two patients from whose sputum bovine tubercle bacilli were obtained were adults aged 21 and 31 years. Pure cultures of bovine tubercle bacilli were isolated from one of these patients on four different occasions (twice direct) and from the other on two (once direct).

Human tubercle bacilli were isolated from the remaining 46 cases—i.e., six cases of alimentary tuberculosis, 31 of pulmonary tuberculosis, and nine of various other forms of

tuberculosis. Of the six children with alimentary tuberculosis, three were under 12 months old; the other three were aged 1½, 4, and 7 years. Two died of general tuberculosis, 2 of tuberculous meningitis, 1 of tuberculous peritonitis, and 1 of pleurisy and pericarditis. The patients with pulmonary tuberculosis were aged 16 to 33 years, with the exception of one who was 50 years old.

In seven instances the material submitted, though apparently tuberculous, did not produce tuberculosis in guinea-pigs. In two of these cases emulsions of the material showed microscopically numerous bacilli indistinguishable from tubercle bacilli; in the others no tubercle bacilli were demonstrated. The material from one of the first two cases was the caseo-calcareous mesenteric glands of a girl aged 10½ years who died of heart disease; the tuberculosis was limited to the mesenteric glands. In the other case the material was caseous inguinal glands from a boy aged five years; tuberculous material from this boy had been investigated on two previous occasions, once when he was 14 months old, and again when he was 2½ years old. The earliest obtained material, caseous cervical glands, produced tuberculosis in guinea-pigs and a bacillus was isolated direct which was identical with a bovine tubercle bacillus. The second material, caseous cervical glands from the opposite side of the neck, and the third, the latest material, caseous inguinal glands, did not produce tuberculosis in guinea-pigs and culture tubes sown remained sterile. In the five cases in which no tubercle bacilli were demonstrated the material was calcareous mesenteric glands (or calcareous nodules from mesenteric glands) from adults (ages 20 to 90 years) who had died from various diseases; there were no lesions suggestive of tuberculosis anywhere else in the bodies of these patients."

The milk from four nursing women regarded as suffering from pulmonary tuberculosis did not produce tuberculosis in guinea-pigs; the diagnosis of pulmonary tuberculosis was confirmed in one case only by the demonstration of tubercle bacilli in the sputum by guinea-pig inoculation.

Volume II., Viruses from Cases of Lupus.

This volume deals with the results of the investigation of the tubercle bacilli found in the lesions of lupus vulgaris. Dr. Griffith states that this disease was dealt with separately from other kinds of human tuberculosis on account of the great variation in the properties of the tubercle bacilli isolated. The method of presenting the results follows the same lines in each series of investigations. The volume begins with a general account of the bacilli examined, with summaries in tabular form of the cultural and pathological properties (both original and after passage) of the various bacilli isolated. Then a table of origins is given, and next a full account of all that has been elucidated in connexion with each virus, including detailed case histories, descriptions of cultural characteristics, and summaries of the results of inoculations in various animals. The inoculation experiments are further presented in tabular form, according to the species investigated, and these tables are followed by a detailed account of the passage experiments with various cultures. Finally appear full post-mortem notes of the larger animals, arranged in groups according to the particular virus used, and illustrated by graphic charts. On pp. 479 and 480 are reproduced a number of photographs (20 in all) illustrating the types of growth of various lupus cultures on glycerin agar and glycerinated potato.

The investigations were carried out to determine whether the tubercle bacilli responsible for lupus vulgaris do as a rule vary in their properties from one or the other of the two types of tubercle bacilli which are the cause of other kinds of human tuberculosis. For this purpose material was used from 20 new cases of lupus, together with fresh material from an old case. From these viruses cultures were isolated and tested on artificial media and on various species of animals. The patients' ages ranged from 3½ to 68 years; 6 of these were males and 15 females, and the duration of the disease varied from 3 months to 36 years. The method of investigation was exactly the same as in the case of viruses from other kinds of tuberculosis; in each instance a culture was obtained and its cultural characters and pathogenicity ascertained.

In order to obtain cultures the lupus nodules or pieces of affected skin were ground to a pulp and emulsified with salt solution. The filtered emulsion was inoculated into a series of two or three guinea-pigs intraperitoneally. In these emulsions acid-fast bacilli were very scanty. After three to five weeks one animal out of each series was killed, and if tuberculosis had developed culture tubes were sown from various lesions; and other tubes were sown from the other guinea-pigs when they died subsequently or were killed. The cultures from the tuberculous tissues were raised exclusively on egg medium. From this the bacilli were subcultivated for a few generations on serum, and then tested on various glycerin media. No cultural differences were observed between different strains of the same virus; but different viruses showed wide variations.

The lupus cultures, therefore, fall into two main divisions according to their cultural characters, as do those from other kinds of human tuberculosis. The first division contains bacilli which grow like bovine tubercle bacilli; the second contains cultures which grow luxuriantly like the human tubercle bacillus. All the cultures in the second division grew distinctly better than the most easy growing of those in the first division.

The Appendix considers the pathogenicity of the cultures under two headings: (*a*) original virulence; and (*b*) virulence after passage through the animal body. Animal experiments demonstrated that few of the cultures possessed the virulence of the group to which they culturally belonged. Of the nine which grew like bovine bacilli only one possessed the high virulence of the bovine tubercle bacillus, while of the 11 which grew luxuriantly only two were regarded by the investigators as possessing the virulence of the human tubercle bacillus.

Dr. Griffith's summary, from which we now quote at length, states that the cultures of tubercle bacilli isolated from the lupus material have shown considerable variation in their properties. Of the 20 viruses investigated, only three yielded cultures which are identical both in cultural characters and virulence with one or the other of the two established types of mammalian tubercle bacilli, the cultures from one of the viruses being typically "bovine," from two typically "human." Of the remaining 17 viruses, eight grew like bovine tubercle bacilli and nine like the human tubercle bacillus, but none exhibited the virulence characteristic of bacilli with such cultural characters.

The characteristics of the two standard types of bacilli in regard to virulence are briefly as follows: The bovine tubercle bacillus when inoculated subcutaneously produces in young calves (dose 50 milligrammes), in rabbits (dose 10 milligrammes), and in monkeys and guinea-pigs (very small doses) a rapidly fatal general tuberculosis. The human tubercle bacillus, on the other hand, when inoculated subcutaneously in large doses, is unable to produce in calves anything more than slight retrogressive general tuberculosis, and never gives rise in rabbits to tuberculosis severe enough to cause death within three months; for the monkey the human tubercle bacillus is as virulent, and for the guinea-pig nearly as virulent, as the bovine tubercle bacillus. The eight atypical lupus viruses with the cultural characters of the bovine tubercle bacillus proved to be less virulent than the bovine tubercle bacillus not only for the calf and rabbit, but also for the monkey and guinea-pig, and the extent to which they thus fell below the standard in virulence varied. Taking first the results of the inoculations into the calf and rabbit, six of the eight viruses displayed for these animals virulence which was less than that of a bovine tubercle bacillus, but greater than that of a human tubercle bacillus. A feature of interest in connexion with these six viruses was the irregularity of the results produced both in the calf and the rabbit by individual viruses. Of the two viruses that remain, one exhibited for the rabbit but not for the calf higher virulence than the human tubercle bacillus, while the other appeared to be less virulent than the human tubercle bacillus both for the calf and the rabbit.

For the monkey the variations in virulence of the eight atypical viruses roughly corresponded with those for the calf and rabbit, and Dr. Griffith specially notes that viruses which fell very little below the bovine tubercle bacillus in virulence for the calf and rabbit, and were therefore on a much higher level in the bovine and rabbit scale of virulence than the human tubercle bacillus, exhibited distinctly lower virulence for the monkey (and guinea-pig) than the human tubercle bacillus. The virus which from the results it produced in the calf and rabbit would have been classed among the human tubercle bacilli was for the monkey the least

virulent of the group, and caused much less severe effects in this animal than the human tubercle bacillus. For the guinea-pig the eight viruses were all less virulent than the bovine tubercle bacillus, and no clear gradation in virulence was brought out by this species of animal.

The other nine lupus viruses with the cultural characters of the human tubercle bacillus all displayed lower virulence than the human tubercle bacillus. The degree to which the virulence fell short of the standard was shown by experiment on the monkey and the guinea-pig to vary widely. As might be expected, no marked variations in the virulence of these viruses were brought out by the more resistant animals, the calf and the rabbit, in which ordinarily an average human tubercle bacillus produces when inoculated subcutaneously only slight disease; the possession of a very low grade of virulence was demonstrated, however, in several of the viruses by the production in the rabbit of no disease or only slight disease after intravenous inoculation, and in the calf of changes confined to the site of inoculation.

Thus the lupus viruses in each division, one containing 9 with the cultural characters of bovine tubercle bacilli, the other 11 with the cultural characters of the human tubercle bacillus, presented many grades of virulence ranging from standard to a very low level. These variations in virulence are represented graphically in a table. Three scales of virulence are drawn, the first for the calf, the second for the rabbit, and the third for the monkey. The properties, cultural characters, and virulence of the tubercle bacilli isolated from the lupus nodules do not appear to have any relation to the age of the patient or to the duration of the lupus in the individual.

In order to ascertain whether the lower than standard virulence of the atypical viruses was stable or unstable, observations were made on the virulence of several of the viruses after a single residence in, or after passage through, the bodies of animals.

In the first division six of the eight viruses were tested after residence in the animal body. In two instances the virulence was increased by residence both in the calf and in the rabbit, the recovered viruses being equal in virulence to a bovine virus. The relationship of these viruses to bovine viruses, which was indicated by their original properties, was by these experiments clearly established. The virulence of the other viruses, with one exception, was stable, no change resulting from repeated passage of them through the body of the calf. In the exception mentioned there was apparently a slight increase in the virulence of the virus during its residence in the fourth animal of one of two series of calves. Though passage failed to raise the virulence of these latter viruses to the level of fatal general progressive tuberculosis, Dr. Griffith has little doubt, judging from their cultural characteristics and the effects they produced in calves and rabbits, that they are bovine viruses which have become degraded in virulence. Another must also be regarded as a bovine virus. It grows like a bovine tubercle bacillus, and though it produced only a limited retrogressive tuberculosis in the calf it caused progressive tuberculosis in the rabbit. As regards another, if this virus was originally a bovine virus the only attribute indicating its pedigree is its mode of growth. On this assumption it would follow, as Dr. Griffith remarks, that cultural characteristics are a more stable quality in the human body than virulence.

In the second division four of the viruses were tested after a single residence in the animal body; the virulence of three was unaltered, while the virulence of the fourth was apparently increased by residence in the body of a monkey. No conclusion, however, can be drawn from the single experiment on the monkey. Apart from the decisive proof of identity with the human tubercle bacillus such as would be afforded by the increase to standard virulence as a result of animal passage, the original properties of the viruses in this division sufficiently indicate their close relationship with the human tubercle bacillus; they possess the cultural characters of the human tubercle bacillus; their virulence for the calf and rabbit is low, and they have induced typical tuberculosis in all the monkeys and in the majority of the guinea-pigs inoculated with them, the effects produced in these animals differing from those following the inoculation of human tubercle bacilli only in their lesser severity.

The facts established with regard to the cultural characters and pathogenicity (original and after passage) of these atypical lupus viruses suggest strongly to the investigators that they were dealing with attenuated varieties in one case of the bovine tubercle bacillus, in the other of the human tubercle bacillus. Was the attenuation of the lupus bacilli antecedent or subsequent to entry into the individual affected with lupus? If antecedent to entry then similar atypical forms should be occurring among the animals or the human beings which are the chief sources of human tuberculosis. But although 30 cases of bovine tuberculosis, 59 cases of swine tuberculosis, and 47 cases of pulmonary tuberculosis in human beings have been investigated by the Commission, no tubercle bacilli have been obtained from these sources which are identical with any of the atypical varieties obtained from lupus. From the horse, however, cultures have in two instances been isolated, which resemble atypical cultures in the first division of the lupus series. Both these viruses were proved to be attenuated bovine viruses by the fact that their virulence was, by passage through the calf, raised to the level of that of a bovine tubercle bacillus. It seems unlikely that any of the lupus patients derived their infection from the horse, since equine tuberculosis is not of frequent occurrence, while the flesh of horses is not commonly eaten by human beings.

There remains to be considered the possibility of attenuation subsequent to entry into the human body. No attenuated forms either of the human or the bovine tubercle bacillus have been isolated from human tuberculous lesions other than lupus, though 115 cases, including nearly every variety of tuberculosis, have been examined. If the attenuation of the lupus bacilli took place in the human body from which they were isolated, it would seem that the influences favouring the change are resident in the skin only, or in more marked degree in the skin than in other regions of the body.

To ascertain whether tubercle bacilli do become degraded in virulence by residence in the cutaneous tissues a re-investigation of the lupus from three of the patients was undertaken. Material was obtained from one patient six months, from another two years, and from the third three years and seven months after the material for the first investigation was removed. Of these, the first had yielded at that investigation typical bovine, the second slightly attenuated human, and the third attenuated bovine tubercle bacilli. In the first two cases no difference either in cultural characters or in virulence between the first and second group of cultures was detected; in the third the later obtained culture produced in the calf more severe results than the first, but was not apparently more virulent for the rabbit. The cultural characters of the later strain of each of the three cases were identical with those of the first. Residence in the skin of six months in one case, two years in another, and three years seven months in a third had not caused any diminution in the virulence of the bacilli or alteration in their cultural characters. It would be interesting, says Dr. Griffith, to obtain cultures from these cases once more, and also from as many as possible of the other cases, and compare their properties with those of the cultures originally isolated.

Though no direct proof that bacilli lose virulence when resident in the skin has been secured, the gradation in virulence of the variants from the standard type and the absence of similar varieties in the food animals and in other kinds of human tuberculosis strongly support the view that it was in the cutaneous tissues of the lupus patients that the degradation in virulence took place.

Dr. Griffith then considers the question whether the bacilli of these variant cultures can be regarded as in a transitional or intermediate stage of transformation from bovine into human tubercle bacilli. As the bovine tubercle bacillus differs from the human tubercle bacillus both in cultural characters and virulence, he anticipates that a gradual transition from the one type of tubercle bacillus to the other would be marked in its intermediate stage by forms which showed a change in cultural characters alone, in virulence alone, or in both properties simultaneously. And the question arises: Do any of the variant cultures stand in the intermediate position between the two types in either or both of these respects?

First, as regards cultural characters. None of the cultures can be regarded as intermediate in this respect since it has been possible to classify every lupus virus either as a bovine tubercle bacillus or a human tubercle bacillus on the basis of cultural characters alone; not one was in this sense equivocal. There is, however, the possibility that a bovine

tubercle bacillus might have fully acquired the characteristic cultural features of the human tubercle bacillus whilst retaining a virulence that would entitle it to be classified among the bovine tubercle bacilli. But there was not found among the viruses of Division II. any example of such a eugonic virulent virus.

Secondly, as regards virulence. Considering first the results in calves and rabbits, animals which have habitually been employed to differentiate between bovine and human tubercle bacilli, the table referred to already shows that there is a series of lupus viruses which in respect of virulence for these animals are intermediate between bovine and human tubercle bacilli; all these viruses had the cultural characters of bovine tubercle bacilli. Had the pathogenic powers of these viruses been lowered for calf and rabbit alone, and not for monkey and guinea-pig, the conclusion would have been inevitable that in these instances cultures were becoming transformed. But inoculation experiments on monkeys and guinea-pigs, animals equally susceptible to both types of tubercle bacilli, have shown that these viruses were reduced in virulence for these species also; in fact, the nearer their virulence for bovines and rabbits approached that of the human tubercle bacillus, the lower it proved for the monkey and guinea-pig. Thus the apparent bridging of one gap was accompanied by disclosure of another equally broad. It was to be anticipated that a bovine bacillus in process of transition into a human bacillus would, so long as it remained more virulent than that bacillus for the calf and rabbit, prove equally virulent with that bacillus for the monkey and guinea-pig; and the circumstance that the lupus viruses in question did not fulfil this condition, that on the contrary they would need to re-acquire full virulence for the monkey and guinea-pig for classification with the typical human virus, precludes Dr. Stanley Griffith from accepting them as transitional in type. In his view, and on the facts so far observed, these dysgonic variant viruses are to be regarded as no more than attenuated varieties of the bovine tubercle bacillus, just as the eugonic variants are to be regarded as attenuated human tubercle bacilli, and do not stand in any closer relation to the human tubercle bacillus than does the typical bovine tubercle bacillus.

THE COLONIAL MEDICAL SERVICE.

FULL particulars of the opportunities for medical practice under the Colonial Office, together with the rates of pay and conditions of service, were not included with the information concerning the public services which was given in the last Students' Number of THE LANCET. We are, however, constantly asked for details, in supplement to those published in the Students' Number, by intending applicants who have not seen our previous articles. The following summary will be useful.

Medical appointments in the public service of our Overseas Dominions are, in the case of the self-governing States, entirely under the control of the local governments. In what are called the Crown Colonies the appointments are filled by the Secretary of State. In Ceylon, Mauritius, Jamaica, Barbados, the Bahamas, and Bermuda vacancies are practically always filled locally by the appointment of qualified native candidates or by transfer from other colonies. Appointments in Malta are all filled locally, and those in Hong-Kong generally by transfer. In Bechuanaland, Basutoland, and Swaziland medical appointments are made by the High Commissioner, and nearly always from local candidates.

The Colonial Services, in which medical vacancies most regularly and frequently occur, and to which appointment is made by the Secretary of State, are the West African medical staff, the East African Protectorates, and the Straits Settlements and Federated Malay States.

Qualifications.—All applicants for colonial medical appointments must be between 23 and 35 years of age, and doubly qualified. Preference will be given to those who have held hospital appointments as house surgeons or house physicians. Testimonials as to character and professional competence will be required, and every candidate will be examined by one of the consulting physicians to the Colonial Office—Sir P. Manson (London), Dr. Hawtrey Benson (Dublin), or Lieutenant-Colonel J. Arnott, I.M.S. (Edinburgh).

Application for appointment is to be made to the Assistant Private Secretary, Colonial Office, Downing-street, London, S.W., by whom forms will be supplied, to be filled up by the candidate, who must name two referees as to character and capacity, and furnish testimonials. Candidates will be asked to attend at the Colonial Office to be interviewed by the Appointments Committee, which meets about once a month. The names of suitable candidates will be noted for consideration as vacancies arise, but no promise can be given that a candidate will eventually be offered an appointment.

The *West African Medical Staff* forms one service for Gambia, Sierra Leone, the Gold Coast, and Southern and Northern Nigeria. Preference is given to candidates over 25 years of age, also to those who are unmarried. There is a probationary period of one year. The salary commences at £400, rising by £20 annual increments to £500 a year. After five years medical officers who are recommended for a higher rate must take a study course; on obtaining satisfactory certificates and completing six years' service the salary is increased to £525, rising by £25 annually to £600 a year. An allowance of £12 is made on first appointment, for camp outfit. There are three principal medical officers, of whom two receive £1000 a year and one £800 to commence with, each appointment also carrying a duty allowance. There are also 26 senior appointments, with salaries ranging from £600 to £900, in addition to duty allowance. The ordinary term of service is one year, followed by two months' leave in England, for which period, as well as for the voyage home, full pay is allowed; half pay is given for the voyage out in the first instance. If the officer returns to the Coast he receives four (instead of two) months' leave at the end of the first year, and free passage is given. Private practice is allowed. Every candidate selected for appointment will be required to undergo a course of instruction in tropical medicine in London or Liverpool, for two or three months at the expense of the Government.

Service in East Africa, Uganda, Nyassaland, and Somaliland Protectorates.—Medical officers are appointed on probation for three years, after which, if their service is satisfactory, their appointment is made permanent. The salary is £400 per annum during probation, and on being confirmed as permanent it rises annually by £20 to £500. There are 39 appointments, as well as certain extra ones, carrying special pay. The principal medical officer in East Africa and Uganda receives £750 to £850, and in Nyassaland £600 to £700. Private practice is allowed. There are also seven temporary appointments (for three years) at £400 a year in connexion with sleeping sickness investigation in Uganda.

Straits Settlements and Federated Malay States.—In practice these medical services may be regarded as one, as officers are frequently transferred from the colony to the States, and *vice-versâ*. In the Settlements there are two house surgeons at Singapore and two at Penang, drawing £300 a year with quarters. There are about 20 posts with salaries varying from £300 to £900, some also having free quarters and some with permission to practise. The principal medical officer draws £1000 a year. In the Federated States medical officers also enter as house surgeons, with pay at £300, rising to £420, and furnished quarters; there are 13 second-grade medical officers, drawing £420 to £600, and eight first-grade officers, with £600 to £720, also with quarters. The senior medical officers at Perak and Selangor draw £900 to £1020, and £780 to £900 respectively, and the principal medical officer draws £1200. Private practice is not allowed, except in the case of the two senior and two of the first-grade officers. In this service all officers are required to contribute 4 per cent. of their salaries towards a widows and orphans fund.

In *British Guiana* there are 40 appointments, with salaries ranging from £300 to £900, and in most cases with right to practise. Candidates must have held a six months' resident appointment in some public institution. In *Trinidad* and *Tobago* there are 49 appointments of £250 to £400, with various allowances and the right to practise. In the *Windward* and *Leeward Islands* there are also 49 similar appointments.

Pensions are granted in the East African service at 50 years of age, on the scale of one-fortieth of the officer's retiring salary for every year of service. In most of the other colonies the pension age is 55, the rate allowed being fifteen-sixtieths of the average annual salary for three years previous to retirement, with one-sixteenth added for each additional year up to 35 years.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH FOR 1910.

City of Lincoln.—The public water-supply of Lincoln continues to be obtained mainly from the river Witham, two supplementary sources being available when the river is exceptionally turbid during times of flood. The sand filtration is maintained at a rate of percolation not exceeding 4 inches per hour. Since the great epidemic of enteric fever due to pollution of this public water-supply in the spring of 1905, the water has been sterilised by the addition of hypochlorite of sodium in the form of "chloros." This is added to the water before filtration at the rate of 1 part of "chloros" to 100,000 parts of water, equal to 8 parts of free chlorine per 1,000,000. Since the addition of "chloros" bacteriological examinations of samples of water taken weekly have invariably given negative results as to the presence of B. coli in 100 c.c. Following the passing of the Lincoln Corporation Water Act, 1908, the works in connexion with the new water-supply, which will be obtained at the outcrop of the new red sandstone at Elkesley, some 22 miles west of Lincoln, have been steadily progressing, and it is anticipated that this source will be available for use before the end of the present year. It is of interest, in view of the importance now generally attached to the carrier as an agent in the production of epidemic enteric fever, to extract from Dr. C. J. Coleman's report the number of notifications of, and deaths from, this disease since 1900.

Year.	Notifications.	Deaths.	Year.	Notifications.	Deaths.
1900	19	6	1906	22	3
1901	15	5	1907	17	3
1902	12	3	1908	22	5
1903	32	4	1909	32	4
1904	17	3	1910	21	1
1905	1054	131			

The epidemic of 1905 must have left behind it, according to modern conceptions, an altogether exceptional proportion of chronic carriers among the population of Lincoln, and, large as was the magnitude of the epidemic of 1905, it can hardly be supposed to have exhausted the susceptible material in a city with a population of over 50 000. The fact that the incidence of enteric fever since 1905 has been merely of the same order of magnitude as in the years preceding the great epidemic suggests that, in this instance at any rate, the chronic carrier has not shown any marked tendency to spread the disease.

Borough of Crewe.—Dr. G. G. Buckley's report shows that in this borough, with a population of some 45,000, diphtheria was prevalent to a notable degree during the later months of 1909 and the whole of 1910. During the latter year 290 cases were notified, the cases occurring in 228 families. Of these 32 died, giving a fatality rate of 11 per cent.; 173 occurred in school children attending a large number of different schools in Crewe. Special arrangements were made in the municipal laboratory for the bacteriological examination of swabs from notified cases, from members of the invaded households, and in the case of school children from other members of the school class. In all, 97 carriers were discovered among contacts who were examined in this way. None of these contacts were allowed to return to school until one, and in many cases two, negative swabs had been obtained, and as a preventive mea ure all were advised to receive an injection of antitoxin. Many acted on this advice, and Dr. Buckley states that "in no case where this was done did an attack of diphtheria follow." No schools were closed in consequence of the epidemic, although infants under 5 years were for a time excluded from five of the schools. In reporting on the Midwives Act Dr. Buckley refers to the high proportion of illiterate midwives still in practice in the town; the majority are unable to read a clinical thermometer, and 12 out of 35 are unable to write. The births registered in the borough during 1910 were 1112; 918 births were attended by midwives, and in regard to these only 13 records of sending for medical help were received. The figures as to vaccination show the marked fall in the numbers of infants vaccinated which has almost everywhere followed the Vaccination Act of 1907; the certificates of exemption, which before 1907 never exceeded 60 in the year, were as many as 275 in 1909, and 356 in 1910.

Urban District of Barnes.—Dr. F. G. Crookshank claims that the system of "bed isolation" in the wards of the Barnes Isolation Hospital, which he has described in the Transactions of the Royal Society of Medicine for 1910, has proved of the greatest service in overcoming difficulties due to an insufficiency of wards, and has been of great help in the prevention of secondary infections. The only disease, with the exception of variola, which he is not quite sure of controlling by this method is chicken-pox, where he thinks it advisable to supplement strict "bed isolation" by general inunction with eucalyptus oil—a practice which, on the other hand, he considers of doubtful utility as a means of preventing infection in the case of scarlet fever. In the rules for admission to the hospital it is stipulated that the medical superintendent may set apart any ward, not for the time being required for ordinary patients, as a private ward at a charge of 2 guineas per bed per week. A similar arrangement might usefully be made in many other isolation hospitals where there is a reasonable demand for greater privacy on the part of a considerable class of patients. In referring to the home treatment of diphtheria, Dr. Crookshank contrasts the public estimation of the medical man who recognises suspicious symptoms at the earliest moment and administers antitoxin, so that the child within a few hours is apparently well again, with that of the doctor who allows a similar case to drift so that ultimately a death-bed tracheotomy is called for. In the latter case Dr. Crookshank would have us believe that the relatives "are quite happy, and complacently assure each other that everything has been done," while in the former the doctor "bears the odium of being labeled an alarmist, and earns the undying hostility of the child's parents." It is to be feared that there is substantial basis for this complaint, though we doubt that the public is in the long run so easily deceived in its judgments. Dr. Crookshank has a protest to make against the present fashion of some medical officers of health to disdain the "common-sense sanitation" which was responsible for the great amelioration of the public health in the "sixties," "seventies," and "eighties," and their tendency to prefer preaching the necessity for socialistic experiments to the humdrum daily work of their districts. This criticism also is not without justification.

Port of Hull and Goole.—Dr. J. Wright Mason's report to the sanitary authority of this port shows the large amount of work which is done in Hull in connexion with disease on hips within the port, the sanitary conditions of vessels, and the prevention of exotic disease. The examination of imported foods is now undertaken systematically on a large scale, and forms a very important part of the work of the sanitary authority. Eleven cases of beri-beri in five ships came under notice during the year, and the character of the food of the patients is described. In one instance part of the diet of Chinese firemen attacked by this disease consisted of "native vermicelli," which the analyst reported to consist of the pith of a rush, with very little food value. The rice samples are usually described as inferior or dirty; in similar cases in future it would be useful to know the extent to which articles other than rice were included in the dietary, and whether the rice had been decorticated. No unusual mortality has been observed during the year among the rats at the various docks; specimen rats have been collected weekly and submitted to bacteriological examination, but in no case was any condition suspicious of plague detected.

Port of Cardiff.—Dr. E. Walford reports that under the cholera, plague, and yellow fever regulations a strict examination is made, during the day and night tides, of all vessels coming directly or indirectly from "infected" or "suspected" ports on their arrival at the Customs boarding stations. Twenty-three vessels from infected ports were medically inspected, principally from ports infected by cholera. During the year the rat catchers were engaged on 48 vessels, including five from plague-infected ports, and over 8000 rats were caught. During the past three years on an average 5000 black rats taken from ships coming from infected ports have been destroyed annually. Specimens examined from time to time at the Cardiff public health laboratory have proved negative as regards plague. Systematic inspection of shipping in respect of sanitary defects has been maintained, 8377 vessels having been inspected on arrival. Among the

matters to which special attention was given are included leaky decks; defective or unlined iron decks over bunks, causing damp beds; and defective ventilation, lighting, and drainage generally. The system of inspection of foods under the regulations of the Local Government Board is stated to be carried out satisfactorily. Large quantities of unsound food were destroyed during the year without having resort to legal proceedings.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 7423 births and 5290 deaths were registered during the week ending Sept. 16th. The revised estimate of population of these towns in the middle of this year is 16,157,797 persons. The annual rate of mortality in these towns, calculated on this revised estimate, which had been 21·2, 20·6, and 19·0 in the three preceding weeks, further declined to 17·1 per 1000 in the week under notice. During the first eleven weeks of the current quarter the annual death-rate in these towns averaged 16·6 per 1000, while in London during the same period the mean annual death-rate did not exceed 15·5 per 1000. The recorded annual death-rates in the 77 towns last week ranged from 5·1 in King's Norton, 6·8 in Handsworth (Staffs), 8·0 in Hornsey, and 9·7 in Reading, to 24·8 in Sunderland, 24·9 in Burton-on-Trent, 26·0 in Bootle, and 26·8 in South Shields. The 5290 deaths from all causes in the 77 towns last week showed a decline of no fewer than 599 upon the number in the previous week, and included 1701 which were referred to the principal epidemic diseases, against 2617 and 2087 in the two preceding weeks. Of these 1701 deaths from the principal epidemic diseases, 1540 resulted from infantile diarrhœa, 55 from whooping-cough, 41 from enteric fever, 27 from diphtheria, 25 from measles, and 13 from scarlet fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases last week was equal to 5·5 per 1000, against 8·4 and 8·7 in the two preceding weeks. The deaths of infants under 2 years of age attributed to diarrhœal diseases in the 77 towns, which had been 2714, 2461, and 1915 in the three preceding weeks, further declined to 1540 last week, and caused the highest annual death-rates of 8·9 in Bootle and in Preston, 9·0 in Hull, in West Hartlepool, and in Sunderland, 9·1 in Stoke-on-Trent, and 9·8 in Burnley. The deaths referred to whooping-cough, which had been 58 in each of the two preceding weeks, declined to 55 last week, and included 15 in London and 6 in Sunderland. The deaths attributed to enteric fever, which had risen from 11 to 28 in the four previous weeks, further rose last week to 41, and was, without exception, the highest number recorded in any week of the current year; 9 deaths were recorded in London and its suburban districts, 4 in Manchester, 4 in Hull, and 3 in Bradford. Of the 27 fatal cases of diphtheria, which were 10 fewer than the average in the four preceding weeks, 10 were registered in London and its suburban districts, and 2 each in Portsmouth, Birmingham, Liverpool, Salford, and Sunderland. The deaths referred to measles, which had declined from 59 to 29 in the four preceding weeks, further declined last week to 25, and was the lowest number recorded in any week of the current year; 4 deaths occurred in London, 3 in Nottingham, and 3 in Manchester. The 13 fatal cases of scarlet fever were 4 fewer than the number returned in the previous week, and included 2 in Bolton. The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had been 1352, 1327, and 1349 at the end of the three preceding weeks, rose again to 1454 on Saturday last; 264 new cases of this disease were admitted to these hospitals during the week, against 132, 168, and 217 in the three previous weeks. These hospitals also contained at the end of last week 808 cases of diphtheria, 241 of whooping-cough, 119 of enteric fever, and 102 of measles, but not one of small-pox. The 1324 deaths from all causes in London last week showed a decrease of 186 upon the number returned in the previous week, and included 97 which were referred to diseases of the respiratory system, against 73 and 95 in the two previous weeks. The deaths attributed to different forms of violence in the 77 towns, which had been 147 and 171 in the two preceding weeks, were 169 last week, and 349 inquest cases were registered. The causes of 26, or 0·5 per cent., of the deaths registered in the 77 towns during the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified last week in Manchester, Leeds, Bristol, West Ham, Bradford, Hull, Nottingham, Portsmouth, and in 51 other smaller towns. The 26 uncertified causes of death last week included 4 in Birmingham, 3 in Liverpool, and 2 each in London, Blackburn and Sunderland.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns, having an estimated population of 1,710,291 persons in the middle of this year, 744 births and 516 deaths were registered during the week ending Sept. 16th. The annual rate of mortality in these towns, which had been 15·5, 17·2, and 16·4 in the three preceding weeks, declined again last week to 15·7 per 1000. During the first eleven weeks of the current quarter the annual death-rate in these Scotch towns averaged 15·1, and was 1·5 per 1000 below the mean rate during the same period in the 77 large English towns. The annual death-rates in the Scotch towns last week ranged from 9·1 and 9·9 in Leith and Paisley to 18 3 in Dundee and 21·8 in Perth. The 516 deaths in the eight towns last week were 20 fewer than the number in the previous week, and included 105 which were referred to the principal epidemic diseases, against 134 and 105 in the two preceding weeks; of these 105 deaths, 80 resulted from diarrhœa, 10 from diphtheria, 8 from whooping-cough, 4 from measles, 2 from scarlet fever, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases in the eight towns last week was equal to 3·2 per 1000, the mean annual death-rate last week from the same diseases in the 77 large English towns having been 5·5. The deaths attributed to diarrhœal diseases, which had been 88, 113, and 78 in the three preceding weeks, rose to 80 last week, and included 67 of infants under two years of age; 39 deaths were recorded in Glasgow, 15 in Dundee, 9 in Edinburgh, 6 in Greenock, and 5 in Aberdeen. The deaths referred to diphtheria, which had been 5 and 8 in the two preceding weeks, further rose to 10 last week, and included 8 in Glasgow. The deaths attributed to whooping-cough, which had been 12, 10, and 12 in the three preceding weeks, declined last week to 8, of which 6 were registered in Glasgow. The 4 fatal cases of measles were equal to the average in the four preceding weeks, and included 2 in Glasgow. The 2 deaths from scarlet fever were equal to the number returned in the previous week, and were recorded in Glasgow and Aberdeen respectively. The fatal case of enteric fever occurred in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 41, 24, and 53 in the three preceding weeks, declined last week to 41, and were 17 below the number in the corresponding week of last year. Of the 516 deaths from all causes in the eight towns last week, 142, or 28 per cent., were recorded in public institutions, and 25 deaths were attributed to different forms of violence. The causes of 12, or 2·3 per cent., of the deaths in the eight towns last week were not specified or not certified; in the 77 English towns the proportion of uncertified causes of death during the week did not exceed 0·5 per cent.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,149,495 persons in the middle of this year, 592 births and 428 deaths were registered during the week ending Sept. 16th. The annual rate of mortality in these towns, which had increased from 19·3 to 22·1 in the three preceding weeks, declined to 19·4 per 1000 in the week under notice. During the first 11 weeks of the current quarter the annual death-rate in these Irish towns averaged 18·1 per 1000; in the 77 English towns during the same period the mean annual death-rate was equal to 16·6, whilst in the eight Scotch towns it did not exceed 15·1 per 1000. The annual death-rate last week was equal to 23·2 in Dublin (against 15·3 in London), 16·5 in Belfast, 19·7 in Cork, 11·5 in Londonderry, 20·4 in Limerick, and 20 9 in Waterford; whilst in the 16 smallest of these towns the mean annual death-rate did not exceed 18·4 per 1000. The 428 deaths from all causes

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING AUGUST, 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,522,628	2	845	498	—	88	1	30	424	3	1891	4·4	—	64	12	46	12	12	2666	2872	6·6	7790	18·9
West Districts.																							
Paddington	142,541	—	11	16	—	4	—	—	13	—	44	3·2	—	2	—	—	—	—	58	60	4·4	187	14·6
Kensington	172,296	—	13	6	—	3	—	1	12	1	36	2·2	—	—	—	1	2	—	69	72	4·4	245	16·0
Hammersmith	121,837	—	23	11	—	3	—	1	6	—	44	3·8	—	—	—	1	3	1	102	107	9·2	255	22·7
Fulham	153,726	—	15	23	—	2	—	3	14	1	58	3·9	—	3	—	2	1	1	112	119	8·1	282	20·0
Chelsea	66,218	—	11	3	—	—	—	—	5	—	19	3·0	—	—	—	1	—	—	25	26	4·1	113	18·4
City of Westminster	159,709	—	15	10	—	2	—	—	4	—	31	2·0	—	1	—	2	2	1	21	27	1·8	186	13·6
North Districts.																							
St. Marylebone	117,844	—	18	4	—	2	—	1	5	—	30	2·7	—	1	—	1	2	—	31	35	3·1	164	15·4
Hampstead	85,599	—	12	10	—	2	—	1	—	—	25	3·0	—	1	—	1	—	—	10	12	1·5	76	10·5
St. Pancras	218,031	—	31	27	—	4	—	2	14	—	78	3·7	—	—	1	4	8	—	108	121	5·8	362	18·1
Islington	327,234	1	75	45	—	7	—	—	15	—	143	4·6	—	2	4	5	6	2	182	201	6·4	534	17·7
Stoke Newington	50,669	—	10	1	—	1	—	—	5	—	17	3·5	—	—	—	—	1	—	20	21	4·3	68	14·6
Hackney	222,674	—	52	13	—	9	—	2	62	—	138	6·5	—	1	2	1	7	1	115	127	5·9	354	17·3
Central Districts.																							
Holborn	49,084	—	9	4	—	—	—	—	1	—	14	3·0	—	1	—	—	2	—	17	20	4·2	76	17·3
Finsbury	87,639	—	21	17	—	2	—	1	10	—	51	6·1	—	1	—	2	4	—	67	74	8·8	185	22·8
City of London	19,475	—	4	1	—	2	—	—	1	—	8	4·3	—	—	—	—	—	—	7	7	3·7	29	17·0
East Districts.																							
Shoreditch	111,284	—	33	14	—	2	—	—	14	—	63	5·9	—	7	—	1	2	—	94	104	9·7	264	25·9
Bethnal Green	128,247	—	19	10	—	2	—	1	24	1	57	4·6	—	6	—	1	4	—	134	145	11·8	307	25·3
Stepney	279,560	—	61	54	—	6	—	2	51	—	174	6·5	—	15	1	3	4	1	219	243	9·1	572	22·3
Poplar	162,290	—	24	18	—	4	—	2	22	—	70	4·5	—	3	1	1	—	1	179	185	11·9	402	26·6
South Districts.																							
Southwark	191,595	—	48	24	—	—	—	3	32	—	107	5·8	—	4	1	4	1	—	145	155	8·4	406	23·1
Bermondsey	125,840	—	19	27	—	2	—	2	15	—	65	5·4	—	—	—	1	—	1	87	89	7·4	249	21·1
Lambeth	298,032	1	48	37	—	4	—	—	18	—	108	3·8	—	1	—	5	5	—	171	182	6·4	506	18·3
Battersea	167,765	—	26	3	—	5	—	1	11	—	46	2·9	—	1	—	—	2	—	115	118	7·3	311	20·7
Wandsworth	313,389	—	51	40	—	4	1	4	13	—	113	3·8	—	1	—	1	6	1	146	155	5·2	451	15·8
Camberwell	261,407	—	74	21	—	6	—	—	13	—	114	4·5	—	—	2	3	4	—	144	153	6·1	398	16·5
Deptford	109,475	—	36	17	—	—	—	—	18	—	71	6·8	—	—	—	—	2	—	86	88	8·4	197	19·8
Greenwich	95,982	—	18	8	—	3	—	1	14	—	44	4·8	—	11	—	2	3	2	75	93	10·1	200	22·2
Lewisham	161,677	—	25	12	—	2	—	—	5	—	44	2·8	—	—	—	3	1	—	75	79	5·1	241	16·2
Woolwich	121,509	—	43	22	—	3	—	2	7	—	77	6·6	—	2	—	—	—	—	52	54	4·6	170	15·6
Port of London	—	—	—	—	—	2	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

in the 22 Irish towns were 59 fewer than the number returned in the previous week, and included 134 which were referred to the principal epidemic diseases, against 153 and 130 in the two preceding weeks; of these 134 deaths, 121 resulted from diarrhœal diseases, 5 from whooping-cough, 3 from scarlet fever, 3 from diphtheria, 1 from enteric fever, and 1 from measles, but not one from small-pox. These 134 deaths from the principal epidemic diseases were equal to an annual death-rate of 6·1 per 1000. The mean rate from the same diseases in the 77 English towns was equal to 5·5, while in the eight Scotch towns it did not exceed 3·2 per 1000. The deaths attributed to diarrhœal diseases, which had been 112, 141, and 117 in the three preceding weeks, rose last week to 121, and included 116 of infants under two years of age; 47 deaths occurred in Dublin, 35 in Belfast, 8 in Cork, 5 in Limerick, and 5 in Waterford. The 5 deaths referred to whooping-cough were equal to the average in the five preceding weeks, and included 3 in Dublin and 2 in Belfast. The 3 fatal cases of scarlet fever, which were slightly in excess of recent weekly numbers, were recorded in Dublin, Belfast, and Lurgan respectively. The fatal cases of diphtheria, enteric fever, and measles were all recorded in Dublin. The deaths referred to diseases of the respiratory system in the 22 towns, which had been 30, 31, and 44 in the three preceding weeks, were 42 last week. Of the 428 deaths from all causes in the Irish towns last week, 102, or 24 per cent, were recorded in public institutions, and 4 deaths were attributed to different forms of violence. The causes of 11, or 2·6 per cent., of the deaths registered in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death during the week under notice did not exceed 0·5 per cent. in the 77 large English towns, and was equal to 2·3 per cent. in the eight Scotch towns.

VITAL STATISTICS OF LONDON DURING AUGUST, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·4 per 1000 of the population, estimated from the unrevised returns of the recent Census to be 4,522,628 persons in the middle of the year. In the three preceding months the rates were 4·3, 4·4, and 5·1 per 1000 respectively. The lowest rates last month were recorded in Kensington, the City of Westminster, St. Marylebone, Battersea, and Lewisham; and the highest rates in Hackney, Finsbury, Stepney, Deptford, and Woolwich. The prevalence of scarlet fever last month showed a marked decrease from that recorded in the previous month; this disease was proportionally most prevalent in Finsbury, Shoreditch, Southwark, Camberwell, Deptford, and Woolwich. The Metropolitan Asylums Hospitals contained 1324 scarlet fever patients at the end of last month, against 1128, 1206, and 1400 at the end of the three preceding months; the weekly admissions averaged 159, against 160, 162, and 200 in the three preceding months. Diphtheria also was less prevalent than it had been in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Fulham, Finsbury, Stepney, Bermondsey, Deptford, and Woolwich. The number of diphtheria patients remaining under treatment in the Metropolitan Asylums Hospitals at the end of the month was 720, against 801, 771, and 839 at the end of the three preceding months; the weekly admissions averaged 85, against 100, 102, and 120 in the three preceding months. The prevalence of enteric fever showed a slight increase over that recorded in other recent months; this disease was proportionally most prevalent in Paddington, Hackney, the City of London, Battersea, and Greenwich. There were 56 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 35, 33, and 47 at the end of the three preceding months; the weekly admissions averaged 10, against 5, 6, and 9 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Bethnal Green, Stepney, Southwark, and Deptford. The 30 cases of puerperal fever notified during the month included 4 in Wandsworth, 3 in Fulham, 3 in Southwark, and 2 each in St. Pancras, Hackney, Stepney, Poplar, Bermondsey, and Woolwich. The 3 cases notified as cerebro-spinal meningitis belonged respectively to Kensington, Fulham, and Bethnal Green.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the five weeks ending Sept. 2nd the deaths of 7790 London residents were registered, equal to an annual rate of 18·9 per 1000 of the population, against 13·2, 11·7, and 12·4 per 1000 in the three preceding months. The death-rates last month ranged from 10·5 in Hampstead, 13·6 in the City of Westminster, 14·6 in Paddington and in Stoke Newington, 15·4 in St. Marylebone, 15·6 in Woolwich, and 15·8 in Wandsworth, to 22·2 in Greenwich, 22·3 in Stepney, 22·7 in Hammersmith, 22·8 in Finsbury, 23·1 in Southwark, 25·3 in Bethnal Green, 25·9 in Shoreditch, and 26 6 in Poplar. The 7790 deaths from all causes included 64 from measles, 12 from scarlet fever, 46 from diphtheria, 72 from whooping-cough, 12 from enteric fever, and 2666 (among children under two years of age) from diarrhœa and enteritis. The lowest death-rates from these diseases in the aggregate were recorded last month in Chelsea, the City of Westminster, Hampstead, St. Marylebone, Stoke Newington, Holborn, and the City of London; and the highest rates in Hammersmith, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Greenwich. The 64 deaths from measles were 57 fewer than the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, and Greenwich. The 12 deaths from scarlet fever were less than one-third of the corrected average number, and included 4 in Islington, 2 in Hackney, and 2 in Camberwell. The 46 fatal cases of diphtheria were slightly above the corrected average number; among the various metropolitan boroughs this disease showed the highest proportional mortality in St. Pancras, Finsbury, Southwark, Lambeth, Greenwich, and Lewisham. The 72 deaths from whooping-cough were 11 below the corrected average number, the highest death-rates from this disease being recorded in Hammersmith, St. Pancras, Hackney, Holborn, Finsbury, Bethnal Green, and Deptford. The 12 fatal cases of enteric fever showed a slight decline from the corrected average number; 2 belonged to Islington and 2 to Greenwich. The 2666 deaths from diarrhœa and enteritis among children under two years of age were greatly in excess of the normal number; deaths from this cause were proportionally most numerous in Hammersmith, Fulham, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Deptford, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was 31·3 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: R. Miller to the *Pembroke*, for R.N. Barracks; and W. A. Whitelegge to the *London*. Staff-Surgeon: A. La T. Darley to the *Victory*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors:—Francis S. Irvine, Frank G. Richards, Ernest B. Knox, John Matthews, and Patrick S. O'Reilly (dated August 17th, 1911). Arthur M. MacLaughlin, James A. Hartigan, James F. Martin, Edmund McDonnell, and Arthur H. Safford (dated Sept. 4th, 1911). Captain Frank H. Noke retires on retired pay (dated Sept. 20th, 1911).

Colonel W. G. Birrell, from Woolwich, has taken up duty as Administrative Medical Officer at Dover. Lieutenant-Colonel F. W. Caton Jones, commanding the Military Hospital at Quetta, has been selected for the increased rate of

pay under Article 317 of the Royal Warrant. Lieutenant-Colonel A. F. L. Bate has been transferred from Rawal Pindi cantonment to take charge of the Station Hospital at Kuldana. Lieutenant-Colonel J. J. C. Donnet, at present serving at Belfast, has been placed under orders to embark for service in the Straits Settlements during the forthcoming trooping season. Major C. A. Stone has taken up medical charge of the Military Hospital at Cosham. Major W. A. Woodside, adjutant of the Royal Army Medical Corps School of Instruction, East Anglian Division, at Ipswich, has been placed under orders to embark for service with the Northern Army in India, embarking on the transport s.s. *Dongola* from Southampton on Nov. 29th next. An exchange of position on the roster for foreign service has been sanctioned by the War Office between Major L. Way, serving at Cosham, and Major A. R. O'Flaherty, serving at Devonport. Major R. C. Lewis has been transferred from Chapel Bay to the medical charge of Carnarvon Camp. Captain W. F. Tyndale, C.M.G., from Dublin, has been appointed Specialist Sanitary Officer at Devonport, with effect from Sept. 28th. Captain A. C. H. Gray, from Belfast, has been selected for appointment as Clinical Pathologist at the Royal Infirmary, Phœnix Park, Dublin. Captain S. B. Smith, from Dublin, has been selected for appointment as Sanitary Officer at Belfast, in succession to Major E. P. Sewell, whose tenure of the appointment will expire on Sept. 22nd. Captain A. E. Hamerton, D.S.O., from London, has been seconded for special duty under the Colonial Office in Nyassaland. Captain L. L. G. Thorpe, from Shipton, has taken up duty at West Down South, Salisbury Plain District. Captain J. H. Brunskill, on completion of the course of instruction to promotion to the rank of Major, has been posted to the Dublin District. Captain W. S. Crosthwait, on termination of field training at Moore Park Camp, has joined the Military Hospital at Fermoy for duty. Captain J. C. G. Carmichael has been posted to Manchester. Captain F. P. Lauder has been transferred from the Aldershot to the Irish Command. Captain B. B. Burke has arrived home on leave of absence from duty on the West Coast of Africa. An exchange of position on the roster for service abroad has been approved between Captain A. F. Carlyon, serving at Devonport, and Captain M. F. Foulds, surgical specialist at Belfast. Lieutenant A. L. Foster has been transferred from Rawal Pindi to the Station Hospital at Kalabagh, Muree Hills. Lieutenant G. O. Chambers, from the Military Hospital at York, has been placed in medical charge of the troops at Moor Laws Camp. Lieutenant A. W. Bevis has been transferred from Chatham to the Military Hospital at Maidstone. Lieutenant J. K. Gaunt, from Cork, has been appointed for duty at Limerick.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions of officers of the Indian Medical Service:—To be Surgeon-General: Lieutenant-Colonel and Brevet-Colonel William Burney Bannerman (dated July 26th, 1911). Majors to be Lieutenant-Colonels: Benjamin Hobbs Deare, Benjamin Curwen Oldham, Robert Bird, C.I.E., Sidney Browning Smith, George Hewitt Frost, Edmund Wilkinson, George Francis William Ewens, Charles Duer, Henry Stotesbury Wood, Thomas Walter Irvine, James Entrican, Walter George Pridmore, Charles Donovan, Jeremiah Penny, and Douglas Henry McDonell Graves (dated July 28th, 1911). Captains to be Majors: William Ernest McKechnie, Harry Diamond Peile, Douglas Henry Fawcett Cowin, William Hancock Tucker, Charles Stewart Lowson, Dugald Nairne Anderson, Nath Manmatha Chaudhuri, Archibald Currie MacGilchrist, John Wallace Dick Megaw, Cecil Maurice Goodbody, Robert Steen, Frederick Fenn Elwes, Ernest Albert Churchward Matthews, Lessel Philip Stephen, Leonard Gilbert, Thomas George Nesbitt Stokes, Harry Malcolm Mackenzie, William O'Sullivan Murphy, and Cecil Charles Murison (dated July 27th, 1911).

The King has approved of the admission of the undermentioned gentlemen to the Indian Medical Service as Lieutenants on probation (dated July 29th, 1911):—John Alexander Sinton, Denis Fitzgerald Murphy, Edward Randolph Armstrong, Charles James Stocker, Eric Edward Doyle, Cyril Macdonald Plumptre, Archibald Wallace Duncan, Edward Austen Penny, George Blenkhorn Harland, Leon Francis Brandenbourg, John Edward Scudamore, and Henry Lewis Barker.

The commissions of the following Lieutenants on probation have been confirmed with effect from Jan. 28th, 1911:—John Scott, Alister Ralph Speirs Alexander, Kanwar Indarjit Singh, Frederick William Hay, George Tate, Sidney Milverton Hepworth, Harry Slater Cormack, George Selby Brock, Krishnan Gopinath Pandalai, John Frederick Henry Morgan, Jyoti Lal Sen, and Charles Albert Wood.

Lieutenant-Colonel J. Lloyd Jones, Assay Master of the Royal Mint at Calcutta, has been appointed Assay Master of the Royal Mint at Bombay, in succession to Lieutenant-Colonel A. Milne. Major W. Young, civil surgeon at Cawnpore, has been appointed to hold medical charge of the Unao district. The services of Major F. H. Watling have been placed at the disposal of the Government for employment in the Jail Department. Major C. Donovan, Madras Presidency, has been permitted to extend his leave of absence home from India by the Secretary of State. The services of Major Pandit Praraylal Atal have been replaced at the disposal of His Excellency the Commander-in-Chief in India. Major C. R. Stevens, professor of anatomy in the Medical College, Calcutta, and surgeon to the College Hospital, has been granted leave of absence home from India for six months. Captain R. C. MacWatters has passed the higher standard examination in Pashtu. Captain E. C. Hodgson, health officer at Simla, has been selected to officiate as Assistant Director of the Central Research Institute at Kasauli during the absence on leave of Major E. D. W. Greig. Captain R. E. Lloyd has been nominated a Fellow of the University of Calcutta. Captain C. I. Brierly has arrived home on 18 months' leave of absence from India. Captain H. H. Thorborn has been appointed an Agency Surgeon of the Second Class and posted as Civil Surgeon to the Khyber Pass Agency. The services of Captain F. C. Fraser have been placed temporarily at the disposal of the Government of Madras. Captain C. A. Sprawson, civil surgeon, has been granted by the Secretary of State for India an extension of his leave of absence for one month on medical certificate. Captain N. E. H. Scott, officiating agency surgeon, has been posted, on return from leave, as Residency Surgeon at Bagdad and *ex-officio* Assistant to the Political Resident in Turkish Arabia. Captain H. R. Dutton, officiating civil surgeon at Purnea, has been appointed to act as Civil Surgeon of Muzaffarpur during the absence on leave of Major B. R. Chatterton. Captain J. McPherson, officiating agency surgeon, has been granted leave of absence home from India for 11 months. The services of Captain E. Bisset have been placed temporarily at the disposal of the Government of the United Provinces for plague prevention duty. Captain R. A. Needham has been selected for appointment as Medical Officer of Health at Simla during the absence on special duty of Captain E. C. Hodgson. Lieutenant F. F. S. Smith has been appointed Specialist in Ophthalmology to the Second (Rawal Pindi) Division of the Northern Army in India.

Major T. A. Granger, I.M.S., has been appointed secretary to the Principal Medical Officer to His Majesty's Forces in India, in the place of Brevet-Colonel H. F. Cleveland, I.M.S.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Robert McC. Linnell is confirmed in his rank. Henry Meredith Buchanan to be Lieutenant (on probation) (dated 10th August, 1911).

THE IMPROVEMENTS IN THE NAVAL MEDICAL SERVICE.

Our contemporary, the *Broad Arrow*, referring to the changes recently made in the organisation of the medical branch of the navy, says: "Apparently the medical branch of the navy is in much the same position as the Army Medical Corps a generation ago. The recent reforms, well-intentioned as they are, do not go to the root of the matter. Until recognition of the medical man in the navy is as full as it is in the army the service will not attract good professional men in sufficient numbers. ..... If things are allowed to rest where they are we shall have as bitter an awakening in the next naval war as we had in the Crimea. In fact, the whole organisation of the medical branch wants to be thoroughly overhauled. ..... Many of the sanitary grievances of the lower deck, which give the Socialist agitator a chance, would be remedied if the medical branch were placed on a better footing. ..... But as the Admiralty has begun to move, perhaps it will continue the good work."

THE JAPANESE NAVAL MEDICAL DEPARTMENT IN THE RUSSO-JAPANESE WAR.

The *Archives de Médecine et Pharmacie Navales* presents in its August number the first instalment of a paper by Dr. Chemin, Médecin de Première Classe (as we would say, Staff-Surgeon), who is translating from the Japanese the fourth volume of the official history of the war of 1904–05, the volume which concerns itself with the work of the Naval Medical Department. At present he is dealing with the early battles of the war. In the third, the successful, endeavour to seal up Port Arthur 168 men were employed in the transports and their accompanying torpedo flotilla, of whom 46 per cent. were lost or killed and 15 per cent. were wounded. These latter were all on board a hospital ship by the second day following, and in Japan, in hospital, by the fourth day, so that the methods for handling the wounded were wisely planned and well executed. Collisions between ships and the explosions of mines destroyed one-sixth of the Japanese Fleet, whether number or size of ships be considered. Of the men of the ships which so foundered, 40 per cent. were lost, and 5 per cent. were wounded. So many men, wounded in the early destroyer attacks, died from their wounds that it was decided to put two hospital orderlies in each boat, except that of the divisional commander, to which a surgeon was sent. Not only the wounded were sent to the hospital ship, but also the bodies of those who had died. This article should be read by every naval surgeon.

The King has given to Surgeon James Campbell Bringan, R.N., His Majesty's Royal licence and authority to accept and wear the Insignia of Officer of the Order of the Crown of Italy, which decoration has been conferred upon him by His Majesty the King of Italy, in recognition of valuable services rendered by him on the occasion of the earthquake in Southern Italy in the year 1908.

During the presence of the Home Fleet in the Firth of Forth the Prince of Wales paid a visit to the Royal Naval Hospital at Butlaw.

Correspondence.

"Audi alteram partem."

SMALL-POX IN THE UNITED STATES: A DANGEROUS DOCTRINE.

To the Editor of THE LANCET.

SIR,—For a couple of weeks I have been keeping on my desk your issue of July 22nd, waiting for an opportunity to compose a suitable protest concerning your annotation on "Small-pox in the United States: A Dangerous Doctrine." In Dr. Trask's article there are, as the annotator painstakingly points out, a few sentences which, when carefully dissected away from the context, *might* be construed as giving aid and comfort to the antivaccinationists; but, read with the skill and care ordinarily bestowed on the reading of scientific articles, no such ideas would be conveyed; and at the worst the errors are not of the nature of "total disregard of logic," "non sequitur," &c., but are merely minor errors of rhetoric. The writer (Dr. Trask) has made it entirely possible for any fair-minded and otherwise sufficiently qualified reader to understand him, but has not quite succeeded in the Herculean task of making his article impossible of misinterpretation.

In the original article Dr. Trask was obviously trying to show that the great majority of small-pox cases in the United States are of an extraordinarily mild type, with a case-mortality of a fraction of 1 per cent., whereas the case-mortality in Germany, Japan, and elsewhere, as well as in certain brief and localised epidemics in the United States, runs up to the classical figures—namely, 15 to 50 per cent. or more—and that this low case-mortality in the United States indicates that the prevailing strain of small-pox here is in some essential particular different from small-pox in Europe and Asia and from the severe affection that occasionally breaks out in the United States. He supports this view with facts and arguments which your annotator perverts into the semblance of a "dangerous," "revolutionary," and "illogical" attempt to discredit vaccination! And this "in the face of such evidence, recounted by himself" (Dr. Trask) and quoted at length by the annotator, as to show that Dr. Trask thoroughly believes in vaccination as a measure of *individual* prophylaxis, and recognises that efficient *general* vaccination will stop even a virulent small-pox epidemic!

In the light of the annotation perhaps I can restate and enlarge on the propositions that have so badly confused the annotator in such a way as not to be misunderstood—at least, not in the same way as Dr. Trask was. This is highly desirable, because while the few careful readers of the Reports thoroughly understand Dr. Trask's views on American small-pox, these views are to-day misunderstood and discredited by thousands of physicians throughout the world, thanks to THE LANCET'S wide circulation and the annotator's misinterpretation.

1. It is true that in certain localities (*e.g.*, *vide infra*) vaccination has been so efficiently performed that there is room for no other explanation of the rarity and mildness of small-pox; but no one familiar with *all* the known facts believes this explanation adequate to account (directly at least) for the almost invariably mild type of small-pox in the United States *as a whole*.

2. To explain the low case-mortality of small-pox in the United States we may assume either that the people are partially immune to the disease, or else that the prevailing strain of infection is greatly reduced in virulence, or both. There is little or nothing to show that the unvaccinated in the United States are for any reason more resistant to the killing power of small-pox than are the unvaccinated in Europe or Asia, who nevertheless appear to be from 10 to 100 times as apt to die when attacked. On the other hand, there is much to show that this low case-mortality in the United States is due to a lack of killing power in the infecting agent.

3. Such an immunity, if it exists at all, may be due to the cumulative results of vaccination or small-pox or other immunising influences as yet unknown, perhaps extending over several generations.

4. If the low case-mortality of the disease in the United States be entirely or in great measure due to an increase in the individual's resistance caused by vaccination or previous small-pox, we would expect that the cases among those not so protected would show the classical high mortality. On the contrary, the case-mortality is very low, even among the non-protected. No *resistance* theory applicable to the United States and not to other countries seems to have any facts to support it.

5. That it will not do to regard vaccination as a sufficient explanation for the low case-mortality of typical American small-pox is further shown by the history of several localities. Ordinary mild small-pox had been prevalent for some time, when suddenly, without any other appreciable change in the situation, high mortality epidemics broke out, which were cut short by efficient general vaccination. This indicates (first and most obviously) that efficient general vaccination will suppress even a virulent epidemic; and (secondly) that given the conditions as to small-pox protection usually existing in typical American localities, small-pox may be either (*a*) not present; (*b*) of the usual mild American type; or (*c*) very rarely of the old-fashioned severe type. In other words, it is almost certainly some factor operating on the community as a whole—some factor other than the desultory voluntary vaccination characteristic of English-speaking peoples to-day—some factor other than personal resistance of whatever nature—that determines what form of small-pox an infected American community is to have. In other words, this consideration further confirms the theory that variation in the seed rather than in the soil is the determining factor.

The "Public Health Reports" is *not* a widely circulated publication in the usual meaning of the term, although a few copies travel considerable distances. It is written and edited by and for professional sanitarians, and the bulk of its contents are the most somnifacient of statistics. Hence there would have been little danger of the anti-vaccinationists getting anything remotely resembling aid and comfort from this issue if it had not been for the painstaking assistance of THE LANCET!

I am writing this on my own initiative and responsibility,

without the knowledge of anyone in the service, least of all Dr. Trask.—I am, Sir, yours faithfully,

NORMAN ROBERTS,
Passed Assistant Surgeon, U.S. Public Health and M.H. Service.

Washington, D.C., August 24th, 1911.

*** Although we have already published in THE LANCET of August 19th Assistant Surgeon-General Trask's disclaimer of the significance that we attached to his original article in our annotation in THE LANCET of July 22nd, we print Passed Assistant Surgeon Roberts's letter. We do this because it does express clearly a position different from, but not necessarily exclusive of, the view that the careful perusal of Dr. Trask's article conveyed to us. A writer's meaning must be gauged by what his language does actually convey. What any writer intends to express is known only to himself and, perhaps, to some in personal touch with him. We have carefully re-read the original article as published in the Public Health Reports and our comment thereon, and we remain of the opinion that that comment, which Passed Assistant Surgeon Roberts calls perverse, was entirely justified from the material then before us. This opinion is strengthened by a reprint of Dr. Trask's article, in which the alterations from the original are so material as themselves to justify the construction that we placed on his original words. To give only one instance. In the original article Dr. Trask wrote (and we quoted the paragraph as part of our gravamen): "That the type of the disease as seen in the United States is due to the protective value of vaccination is shown not to be true for certain localities in which outbreaks of the virulent form of the disease have been reported." In the reprint this passage appears as follows: "That small-pox in the United States has become permanently mild has been shown not to be true for those localities at least in which outbreaks of the virulent form have been reported." Again, Dr. Trask, in his original article says: "To explain the small number of deaths in the United States, we may presume that either the people are partially immune to the disease or else that the existing infection is extremely mild and non-virulent." We asked, "Why, 'either ..... or else?' The two conditions are not mutually excluding." Passed Assistant Surgeon Roberts practically recognises this when in re-stating the same argument he adds the words "or both" to the proposition. The errors we cited do show, as we said, disregard of logic, their conclusions are "non sequiturs," and they are not merely errors of rhetoric, minor or otherwise, and oddly enough, Passed Assistant Surgeon Roberts, who reproaches us for this view, would appear to take it himself. We are glad to find that in the article as amended the meaning is clear. Our correspondent denies that the Public Health Reports are a widely circulated publication in the usual meaning of the term. Is it not the case that they are sent for comment to the principal lay press of the United States? Does not that press reach and influence the people of the United States?—ED. L.

A QUESTION IN EUGENICS.

To the Editor of THE LANCET.

SIR,—I hold no special *brief* for sterilisation, and the plan which I have always advocated for dealing with the "mentally deficient" is the following: The notification of these aments to the asylums committee of the county by the medical officers attached to the different schools. They would then be certified before a magistrate and be sent to some farm or industrial colony until the age of 21, when they would again be examined by some expert body appointed for the purpose and a decision arrived at as to whether they should be allowed out into the world, with or without sterilisation, or be segregated for life when no sterilisation should take place. The Lunacy Commissioners could be consulted on the subject, although it seems manifestly unfair to throw more duties on a body already overworked. The rich and poor should be notified, and the former, if they prefer, could have colonies of their own supervised by county officials.

A large number of paupers receiving outdoor relief are feeble-minded; these could be weeded out by the medical officers of the workhouses and segregated. The habitual criminal, the "mental alcoholic"—both degenerates—and the juvenile feeble-minded offender could be dealt with in a similar manner. These sections should be carefully classified and sent to separate colonies. This is a rough outline of the scheme I consider best and the details could be embroidered in. The main reason for making the age 21—it could be 18 in many cases—is that there is a large number of dull and backward children whose mental condition closely resembles that of feeble-mindedness, but whose state is really due to a faulty environment—lack of nutrition, &c.—and is not *inborn*. These under favourable conditions would become of average—maybe of more than average—intelligence, and could readily take their place in the world and in time beget healthy offspring. The plan will cost money, but just as an individual, when he is ill, does not object to dip deeply into his purse for the sake of health, so the nation should part freely with its wealth for the sake of national health. The Government is about to combat tuberculosis, why not degeneracy? It would be the truest economy in the long run. Taking the figures for last year, insanity has increased 262·2 per cent. on the figures for 1859, whilst during the same period the population has only increased 85·8 per cent.

Miss Dendy, the very able administrator at the Sandlebridge Colony, containing 225 feeble-minded boys and girls, has said that weakness of will in proper circumstances made for morality and for happiness; that if this class could be so easily guided into wrong in improper surroundings they could be equally well guided towards right in proper circumstances. A man has lately committed murder in London. What is his family history? Father an epileptic and a drunkard, mother insanity in her family and she herself a drunkard, the brother of the murderer in this asylum. Recently I have had occasion to take the family histories of the last 50 young females admitted here, ages from 15 to 25, non-imbecile and non-epileptic, not married and not mothers. What did I discover? 90 per cent. deeply infiltrated with insanity, epilepsy, tuberculosis, alcohol, and cancer. Take a family consisting of six children, two of whom were epileptics; these two should be prevented from begetting offspring; the other four, being apparently normal, need not be interfered with. Is this an unreasonable request? No one would knowingly breed from a diseased animal, and man, notwithstanding his high understanding, is yet essentially an animal. Surely nothing can be more wasteful than this army of degenerates.

To the medical profession public opinion entrusts the welfare of the race, and through this the destiny of the nation; therefore, it behoves us patiently to inquire into the causes of mental degeneration and fearlessly to recommend the remedy which, in my opinion, lies in eugenics. There are some who apparently fail to realise the great differences which exist between castration and vasectomy. Although I do not recommend castration I have always failed to understand why there should be such an outcry against the operation, for numerous *healthy* ovaries and testicles have been removed for the cure of *physical* diseases. If for the cure of physical diseases, why not for the *prevention* of *mental* diseases?

The crux of the whole question is this: Are the "unfit" producing children at the rate of 7 per family and the "fit" at the rate of 3? If this is so, it is not necessary to be much of a prophet to foretell the result, for the bedrock of heredity is that "like tends to beget like," and through the continuity of the germ plasm we obtain continuity of resemblance from generation to generation. Figs do not grow on thistles nor grapes on thorns. Environment can but develop or crush that which heredity impresses on the germ plasm; it is not creative, and is to heredity what manure is to a plant. But good and favourable conditions are absolutely necessary for the proper development of every living organism.

The eugenic rules may be summarised into three (Professor J. A. Thomson): (1) The mentally and physically healthy should be mated; (2) a markedly good constitution should not be paired with a tainted one, for this would be wanton

waste; and (3) every precaution should be taken to prevent a badly tainted stock from diffusing itself. A race which ceases to insure that its better elements have a dominant fertility destroys itself far more effectively than its foes could ever hope to do on any battlefield.

The highest gift which has been bestowed on man and woman is the *creation of life*, and do we not stand condemned when we deliberately permit degenerates to curse their offspring with a mental disease which will cause untold misery to many generations? Pity is the highest and most exquisite of human emotions, and surely the *prevention* of suffering is more noble than its *creation*.

I am, Sir, yours faithfully,
C. T. EWART, M.D. Aberd.

Claybury Asylum, Sept. 9th, 1911.

To the Editor of THE LANCET.

SIR,—The correspondence which has lately taken place in THE LANCET shows that not a few have failed to grasp the proposals I made in 1903. In no case have I proposed that either the ovaries or testes should be removed. I proposed three slight operations: (*a*) vasectomy—dividing and ligaturing the vasa deferentia; (*b*) spermectomy—dividing and ligaturing the entire spermatic cords; and (*c*) fallectomy—dividing and ligaturing the Fallopian tubes. Since then Dr. Sharp of Indiana, U.S.A., has proposed that the testicular end of the vas should not be ligatured, so that the spermatic fluid might infiltrate the local tissues and be absorbed. So far as we know, when vasectomy is performed there remain (1) sexual desire; (2) sexual power; but (3) no power to impregnate. With spermectomy all three disappear; with fallectomy there are sexual desire and power, but no power to conceive.

Some cases have been published where it has been alleged that women have become pregnant after the tubes and ovaries have been removed. My theory regarding this is that since we have so far no knowledge of what number of hours, days, or months the ova may remain in the uterus before impregnation takes place, therefore, the ova may be resting there *before* the operation has taken place. We know more about the vitality of the spermatozoa longevity. No doubt when vasectomy has been put more fully into use we shall have cases where impregnation has taken place after the vasa have been ligatured. But this will be due to the sperms contained in the vesiculæ, or because of female polygamy. This is one reason why, when possible, vasectomy should be performed early in life. I further proposed that sterilisation should be divided into voluntary and compulsory. The former would apply to tuberculosis, cancer of the womb, deformity of the pelvis, and other physical and mental conditions where two or more practitioners could certify that the parental diseases were incurable. It is instructive to find Dr. Sharp relating that of some 1000 criminals sterilised over 500 demanded to be so operated upon. I think a very large proportion of degenerates suffer so greatly that their lives would be a little brightened if they knew they would not curse their children with their incurable defects. Under compulsory sterilisation I propose to include idiots, imbeciles, feeble-minded, sane and insane epileptics, lunatics, sexual perverts, habitual inebriates, drug habitués, prostitutes, chronic vagrants, and habitual criminals. Such a list will be found in the second edition of my work, "Race Culture; or, Race Suicide."

May I suggest that it would help to clear our ideas if THE LANCET appointed a committee to inquire into and report upon the alleged secondary secretions of the testes and ovaries. For so far we seem to have obtained most of our knowledge (?) from the various drug manufacturers and from quacks. I am, Sir, yours faithfully,

Liverpool, Sept. 10th, 1911. ROBERT R. RENTOUL.

To the Editor of THE LANCET.

SIR,—Perhaps you will admit a belated note from a correspondent who, being abroad, has only just seen this controversy as far as your issue of Sept. 2nd. The question as originally put was unanswerable, because sterilisation by castration and by vasectomy or salpingectomy was regarded as posing the same moral issue. The former operation has well-known consequences to body and mind; the latter affects no function or appetite or capacity, but merely makes parenthood impossible. But the question, as put, has led most of your correspondents to condemn sterilisation on the ground that it means castration.

Castration was never contemplated by Sir Francis Galton; it has been repeatedly repudiated by myself in lectures to the Sociological Society and the Eugenics Education Society; Mr. Havelock Ellis has done likewise, and has explained the (exceedingly obvious) difference between castration and vasectomy in the *Eugenics Review*, and will shortly do so again in one of the "New Tracts for the Times" which are about to appear.

Dr. Waller has thus occupied a column and a half of your space with entirely irrelevant considerations. He cannot name one "crack-brained exponent of eugenics"—to quote his courteous phrase—who advocates what he condemns; but the names of its slack-brained opponents are legion.

I am, Sir, yours faithfully,
C. W. SALEEBY, M.D. Edin., F.R.S. Edin.

Scheveningen, Sept. 15th, 1911.

PELLAGRA IN EGYPTIAN PRISONS.

To the Editor of THE LANCET.

SIR,—In your review of the late Sir Eldon Gorst's report on Egypt and the Soudan in 1910 (THE LANCET of August 19th, 1911, p. 539) I notice the statement that bread made from maize has been substituted for wheaten bread in the prisons, and that "evidently there is no official belief in the view that this change of diet may increase the cases of pellagra among the prisoners." It seems probable that the latter remark is due to a misunderstanding as to the kind of maize used in the prisons, which in reality is the small kind usually called millet or "durrha Owaiga." The large-grained durrha called "durrha Shamy," or "Indian corn," or simply "maize," is not used in the prisons' diet. So far as I know the former kind (millet) has not been inculpated as a cause of pellagra. As what is ordinarily called maize is not used in making bread in the prisons in Egypt at all, any pellagra that may arise in the prisons cannot be ascribed to the change from wheaten bread, unless of course millet is also believed to be a cause of pellagra.

I may add that in the Report on the Prisons of Egypt for 1910 Dr. R G. Kirton, the principal medical officer, writes on p. 18 that the use of maize bread was not allowed, partly because of its supposed causal relation to pellagra, but that millet was selected to replace wheat. In view of the rival theories as to the causation of pellagra, it may be worth while to record the actual facts in the case of the Egyptian prisons. I am, Sir, yours faithfully,

J. WARNOCK,
Director, Hospital for the Insane, Abassiah.

Cairo, Egypt, Sept. 8th, 1911.

TOXIC EFFECT OF ASPIRIN.

To the Editor of THE LANCET.

SIR,—I have long been anxious to see a case of aspirin poisoning as described by your correspondent Dr. Alexander Brown, in THE LANCET of Sept. 9th. Perhaps he or others of your readers who may have met with similar cases can tell us whether the patients presented symptoms characteristic of minor thyroid inadequacy. The symptoms I refer to are subnormal temperature, hypersensitiveness to cold, liability to chilblains, marked dental caries, general muscular asthenia with sensation of fatigue, and constipation. In view of Leonard Williams's researches we must also accept the presence of enlarged tonsils or adenoids (past or present) and nocturnal enuresis as equal evidence. Any rickety symptoms must also be added to the list, and among these must be included the contracted palatine arch; nor must one forget to include goitre, inasmuch as this is clear evidence on the part of Nature that the supply of thyroid secretion is inadequate. In the case of Graves's disease the secretion is doubtless from some points of view excessive, though possibly even here there is some insistent demand for secretion which may be the hidden cause of the disease. Many other individual symptoms may need to be considered in weighing the merits of a given case of thyroid insufficiency, and such symptoms must be gleaned from those of myxœdema, cretinism, and other conditions in which thyroid medication has proved so valuable. Naturally they will not *all*

be found in every case of *minor* thyroid inadequacy. But the point of my inquiry is this.

The symptoms of aspirin poisoning are practically the same as those of urticaria major or angioneurotic œdema, of which I have only treated two cases. The first was before I had experience of the power of thyroid medication, and though I patiently administered calcium lactate I was distinctly disappointed in the results, and the patient was subject to frequent and sudden attacks of an alarming nature. The mucous membrane of the cheeks and fauces was several times so affected as to make respiration difficult and swallowing almost impossible, and we were constantly prepared for tracheotomy. The lips and eyelids were often so swollen and red as to make the patient unrecognisable, and wheals of urticaria the size of the palm of the hand would appear on her limbs or body. She eventually got well and was lost sight of after about six weeks, but calcium lactate alone did not prove to be the panacea I looked for. The second case was similar but less intense. The patient was 25 years of age, and had been subject to these attacks for three or four months when I first saw her, but in her case the urticaria never lasted more than an hour or two. Thinking that her general condition warranted me in classing her among the thyroid deficients, I gave one grain of thyroid extract three times a day with calcium lactate. The attacks of urticaria rapidly lessened both in frequency and intensity, and after three weeks disappeared for good. Thyroid medication was continued, and the general health improved so much that in about a couple of months all treatment was left off, and the patient has remained well since. The results in this case warrant one in thinking that urticaria major was attributable to thyroid deficiency. It would therefore be extremely interesting to know whether those patients in whom a dose of aspirin speedily provokes a similar condition are not also thyroid deficients, especially in view of the apparent antagonism between salicylates and thyroid secretion to which I drew attention in a recent article. Naturally one would not infer that a single dose of aspirin could produce urticaria or angioneurotic œdema in a few moments by direct action on the thyroid gland, but it is not difficult to suppose that the presence, or absence, of an adequate supply of thyroid secretion in the blood may so modify the condition of the latter (possibly *viâ* the calcium coefficient) that the normal individual can take aspirin without getting angioneurotic œdema, whilst the thyroid deficient might be unable to do so. Have any of your readers administered aspirin to cretins or to patients suffering from myxœdema, and, if so, with what results? The answer to this question may throw some light on the matter, though, again, there are obvious differences between myxœdema and minor thyroid inadequacy.

I am, Sir, yours faithfully,

H. EWAN WALLER.

Moseley, Birmingham, Sept. 15th, 1911.

THE RADIO-ACTIVITY OF SEA-WATER.

To the Editor of THE LANCET.

SIR,—The very interesting letter by Dr. Sidney Russ which appeared in THE LANCET of Sept. 16th does not, if I may be pardoned for saying so, quite clear up the physical side of the question.

It is, I believe, admitted that the water from many radio-active springs loses its activity rapidly on being bottled. Such water, if examined after several months, may perhaps be shown to contain minute quantities of actual radium salt in solution, but the amount of radium permanently present cannot be taken as a measure of its activity when drunk at its source. How the extra quantity of emanation—over and above the amount formed by its dissolved radium salt—gets into the spring water, I do not pretend to say. But it is at least theoretically conceivable that ocean water may be similarly charged when freshly collected.

Only a careful determination of the quantity of emanation present in freshly gathered sea-water (obtained as described by Robert Simon) with the amount contained in old samples can settle the matter. This determination presupposes great technical skill and the command of delicate apparatus. It is essentially a problem for the trained physicist and not for the physician. All that the latter can do is to point out that, physiologically and therapeutically, sea-water behaves in the same manner as water rendered temporarily radio-active by dissolved emanation—i.e., by a gaseous and rapidly decaying radio-active body, present apart from, or in addition to, radium itself.

I am, Sir, yours faithfully,

F. HERNAMAN-JOHNSON, M.D., Ch.B. Aberd.,
R.N. (retired).

Bishop Auckland, Sept. 16th, 1911.

TO MEDICAL FREEMASONS.

To the Editor of THE LANCET.

SIR,—May I again, through the medium of your widely read columns, appeal to medical men, and medical Freemasons in particular, for votes for the Masonic charities? At the forthcoming elections there are three medical candidates. Votes for any of the Masonic institutions are equally acceptable, as exchanges can be effected, and will be gratefully received and acknowledged by me.

I am, Sir, yours faithfully,

WILLIAM WILSON,
Secretary, St. Luke's Medical Lodge of Instruction.

184, Goldhawk-road, W., Sept. 19th, 1911.

EMOLUMENTS IN THE INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—Having read your annotation in THE LANCET of July 15th, p. 171, entitled, "Emoluments in the Indian Medical Service," and some of the letters published from time to time in your correspondence columns, I venture to express my opinions on some of the points raised therein.

1. With regard to the contention that private practice is obtainable in most places—so it is, to the maximum value of £20 to £50 a year. The truth is that for 90 per cent. of civil surgeons there is really no private practice available. The remaining 10 per cent. are the men in the "plum" billets, who, naturally and rightly, are mostly senior men or those having special qualifications. The reason why nearly all Indian Medical Service men are so anxious to obtain civil employment is that there are excellent opportunities for good professional work. Moreover, a civil surgeon is his own master to a greater extent than is any other "district" or regimental official, probably.

2. It is not correct to say that a young officer has usually to wait eight or ten years before obtaining civil employment. The length of time varies from about three up to about ten years. Naturally one has to wait longer for the more popular provinces.

3. With regard to the remark of one of your correspondents that the purchasing power of the rupee had halved and the cost of living doubled, or words to that effect, I do not agree. No doubt its purchasing power has decreased, but pay has been increased. The real truth is that it is the fashion to use many articles of European manufacture nowadays, the price of which is necessarily high, as compared with similar articles of indigenous origin, and that consequently even a "fair wage" does not go far. If people care to, they can easily ride country-bred ponies instead of expensive "walers" and arabs, and have country-made cloth made up by the local "darzi" into "knockabout" suits which are quite good enough for every-day wear, &c. That polo and shooting are becoming the sports of rich men hardly seems to me to be a legitimate "grouse," even if true. I doubt if it is absolutely true, and think that the following instances support my contention. Firstly, I know a subaltern in a British regiment who plays polo and pig-sticks and occasionally shoots big game (he shot a tiger two years ago, has played polo for his unit, and has killed many pigs this season). He gets only a very small allowance. Secondly, I once served with a native infantry regiment which had been "runner up" to a British cavalry regiment in an open tournament. I doubt very much whether any of the British officers of that regiment had any private means whatever, but their mess was run on very economical lines, and they did not drink champagne or smoke expensive cheroots.

4. With regard to the numerous transfers in the early years of a man's service, travelling allowances are given

which will cover or nearly cover the expenses of a bachelor, and if men will be such fools as to get married before they have made for themselves a position which justifies the keeping of a wife, it seems to me that they ought to be prepared for hardships. As a matter of fact, these long transfers are educational, in my opinion, as one sees new races and manners. I speak from experience, having three times been transferred from one end to the other of the empire as well as having had other transfers of 1000 miles or so.

The general advantages of the Indian Medical Service are enormous. I will enumerate some of them in general terms, premising that there are differences between the military and civil sides, generally to the advantage of the latter. 1. Pay at more than a "living wage" from the beginning. 2. An extremely liberal scale of pensions, the first of £300 a year on completion of 17 years' service, rising every year thereafter *and available at every intermediate year* to £700 on completion of 30 years' service, with the possibility of increased pay and rates of pension if administrative rank is obtained. All privilege leave, furlough, &c., are reckoned as service for pension. 3. One year's holiday for every three years' work with special allowances for and extra furlough for study. 4. A variety of work and appointments so that the most diverse temperaments and capabilities can get the sort of "job" they like and "scope" which the average man would not get in a more highly developed country. For instance, such diverse appointments as the following: sanitary commissioner of a province, consultant physician or surgeon, bacteriologist and public analyst, pathological research appointments, superintendent of a jail or lunatic asylum, &c. Here I may note that I know of the case of an officer of about 35 years of age and less than 12 years' service who, subject to the control of the Government, has the sanitary destinies of 22 million people in his hands and draws a salary of about £1000 a year. He is a "good man," of course, but not a genius. 5. The privilege that the men with whom you have to work are as a rule educated gentlemen of your own social class. I should here like to quote from a letter I recently received from a very senior Indian Medical Service officer. He says:—

> I have had no "grouses" whatever against the service, and I can strongly recommend it to any keen young medical man, even now that the outlook may not be as hopeful as it was 32 years ago. I think perhaps to the confirmed "grouser" the best thing is to refer him to the many men of about his own calibre who were students with him at home and compare the lives they have led and the fortunes they have made with that of their contemporaries who elected to go into the I.M.S. If this does not convince him of some of the advantages of the I.M.S. all I can say is nothing will and discussion is useless.

Let me also detail the experiences of an intimate friend in the Indian Medical Service. He is not yet 33 years of age, nor has he completed ten years' service. He is an average man without special qualifications. He has had a sister out to the country and has paid the greater part of the expenses of a long university education for a younger brother. He has been able to spend between £200 and £300 on his own interests and amusements, such as scientific apparatus, books, horses, &c. He has had two holidays of three months each and one of six weeks, and his life has been insured for several years past for well over £1000. He is engaged to be married shortly, and if he dies on the day of his wedding his widow will get a pension of about £120 a year, and he has got no debts. Is it likely that he could have done, and enjoyed, so much in any other medical service or in private practice?

Now as to the disadvantages. These are very real, and some of them, such as those due to the climate, one does not fully realise till one gets older, when they entail separation from wife, children, and friends. The less obvious disadvantages are none the less real. They are undoubtedly affecting the recruiting of most of, if not all, the Indian services. They tend to increase and not to diminish as time goes by. As they are of a political nature, and I am an officer of the Government, I do not care to say much more about them, but the position may be summed up in the words of a distinguished junior officer of the British Army, since retired, which he uttered to me just before he left India for good. These were, "In my opinion, this country will be no place for a self-respecting white man in ten years time." I do not intend to reply to rejoinders, because this letter is not written to call "grousers" to repentance, but to show that the Indian Medical Service is not entirely composed of such.

Finally, Sir, I must apologise for the length of this letter, but the nonsense one sees written by "grousers," who often ignore the real difficulties of the situation, must be my excuse.

I am, Sir, yours faithfully,

August 28th, 1911. CIVIL SURGEON.

TUBERCULOUS PERITONITIS WITHOUT ASCITES, APPARENTLY CURED BY INCISION.

To the Editor of THE LANCET.

SIR,—The notes of the accompanying case were taken at the patient's bedside over ten years ago, and the case had gone out of my mind when I met the anæsthetist who assisted me, and we talked the incident over, coming to the conclusion that the case should be published, as in similar circumstances similar means might be taken in an apparently hopeless case. Although I have since the date of this case operated on several cases in which ascites was present I have not had a case of tuberculous disease of the peritoneum without ascites being present. No doubt many such cases have been treated by incision, though I have not come across any account of them, and none of the surgeons to whom I have described the case has had a similar experience.

I was called on June 10th, 1900, to see a boy, aged 14 years, who had been attended for about five months by the medical officer to his club, who had told the parents that he could do nothing further, and warned them to expect his death in less than a week. I admit that I felt he was not far out in his prognosis. The patient was practically skin and bone; he was lying on his back in an apathetic condition, from which he was aroused at frequent intervals by pain in the abdomen. His pulse was 120, his temperature 99·8° F. He had frequent attacks of diarrhœa, with constipation at intervals of a few days. The abdomen was distended, very tender on light percussion, tympanitic, with no dulness in the flanks. Food caused him pain, and apparently nearly all the best-known artificial foods had been tried.

At the end of a week he improved to the extent of losing a great deal of the pain and the abdomen became less distended and generally rigid and retracted. The temperature varied between 101·6° to 99°, and he took more interest in his surroundings, but this improvement did not last long. It was due, I think, to a more rigid system of dieting, for he was given food every two hours, and plasmon was given with the other foods. But by the end of June he was to all appearances slowly dying, and it then occurred to me that an experimental incision through the abdominal wall could do no harm and might possibly do good. On July 4th, under A.C.E. administered by another doctor, I made a small incision below the umbilicus. The peritoneum was thickly studded with small sago-like tubercles, both on the visceral and parietal membranes. I introduced two fingers through the opening and gently separated such adhesions as I could reach; not a trace of fluid in the peritoneal cavity was found. The wound was closed with silkworm gut sutures and not touched for about 11 days. There was an obvious improvement in the first day or two in his general condition. The temperature became normal and stayed normal, the bowels became more regular, the appetite came back, and I see by my notes on August 6th I lent him some volumes of the *Strand Magazine*. He continued to take his food well, and I persevered with the plasmon. On Sept. 10th he weighed 4 st. 10 lb., the average weight of a boy his age and height being about 6½ st. What he weighed when I first saw him must at a guess have been under 4 st. By Oct. 10th he weighed 5 st. 1 lb. On Oct. 22nd he did not seem so well, so I weighed him and found he had lost about 2 lb. Investigation showed that he had not taken plasmon for nearly a fortnight; this was resumed, and my next note, dated Nov. 5th, gives his weight as 5 st. 3 lb. A fortnight later, Nov. 19th, the gain on this was 4 lb.—viz., 5 st. 7 lb., at which he remained on Dec. 3rd. He continued the plasmon. On Dec. 17th he weighed 5 st. 10½ lb., and at my last visit on Dec. 22nd his weight was 6 st. 1 lb. I marked him cured and took him off my list.

I learnt that he had taken a place as errand boy to a grocer either at the end of January or beginning of February and was keeping quite well. I showed the patient and read a few short notes on his case at one of the local meetings of the Eastern Division of the British Medical Association in

November or December, 1901, a year after his cure. He was perfectly well, and may, for all I can tell to the contrary, be alive and well to-day. It seems impossible to doubt that this boy's life was saved by the simple incision. How it could have acted I do not profess to know. I also consider that the plasmon was a great help, and the two noted occasions when it had been discontinued—on one he lost weight and on the other the weight remained stationary—were to my thinking more than a coincidence; that is proved by the increase of weight when he returned to his regular quantum of the plasmon.

I am, Sir, yours faithfully,

Sept. 15th, 1911. A. H. M.

TATTOOING *v.* VACCINATION.

To the Editor of THE LANCET.

SIR,—Since I wrote the letter which appeared in THE LANCET of August 26th, I have been told by an elderly ex-officer (not medical) of the Indian Army that in his day he was aware of a belief among the Burmese that tattooing was a prophylactic against malarial fever, but that he had not heard of it as a substitute for vaccination. The point, however, to which I called attention, and as to which Mr. J. Y. W. MacAlister has corroborated me, is that British medical officers appear to inculcate the belief among British soldiers serving in India that tattooing protects against small-pox. Do they or any of them admit doing so, and if so, on what grounds do they do it?

I am, Sir, yours faithfully,

Sept. 16th, 1911. E. A. A.

THE ORGANISATION OF THE MEDICAL PROFESSION.

THE POSITION IN NORTHUMBERLAND AND DURHAM.

(FROM OUR SPECIAL COMMISSIONER.)

Newcastle, Sept. 18th, 1911.

TEN years ago the medical practitioners of the counties of Durham and Northumberland were in open revolt against the system of contract work then prevailing. Without organisation, however, there was little or nothing to be done. At Gateshead an association had been formed, and there was in Newcastle a Medical Ethical Society. It was in August, 1900, that the first and not very successful attempt was made to form a union of the Northumberland medical practitioners, much on the same lines as that of the County of Durham Medical Union which was already in existence. The movement grew and was fortunate in securing for its president Mr. Rutherford Morison. As a leading surgeon and consultant Mr. Rutherford Morison had no personal interest whatsoever to serve, and this gave a great moral force to his arguments, whether addressed to medical practitioners or to the medical aid organisations by which they were employed. By the end of the year 1900 a union had been formed of Northumberland practitioners, and it amalgamated with the existing Newcastle Medical Ethical Society. The next year the newly created Medical Union was already engaged in numerous disputes throughout the district and several medical strikes took place. Details concerning this organisation and struggle were published in these columns at the time. There were 350 practitioners in Northumberland, and before the expiration of one year 171 had joined the Medical Union. In the course of time the union gained further strength, and after many struggles overcame all resistance so far as the colliery districts are concerned. Formerly a collier paid 6*d.* a fortnight for medical attendance on himself and family. This is now uniformly raised to 9*d.* through the action of the union. The pitmen in Northumberland are very loyal to their trade union, and the medical practitioners made a great point of this fact. They freely called the imported medical men blacklegs, and appealed to the pitmen to allow that the medical practitioners had equal right to form a union of their own and oppose strike-breakers.

In the county of Durham there has not been the same measure of success. It seemed more difficult to bring the colliers and the medical practitioners into line. Then the settlement effected in the towns was not so satisfactory. Here there are a multitude of insurance companies and clubs of all sorts. Some of these only paid 2*s.* 6*d.*, and very few paid more than 3*s.* 6*d.* a year to their medical officers. At Newcastle the conditions have been raised to a uniform 4*s.* a year. This, however, is not satisfactory because the capitation fee is not high enough and because the 4*s.* arrangement has not a retrospective effect. Those who are working for less continue to do so, and it is only on their posts becoming vacant that the 4*s.* minimum payment is to be applied.

The Problem of National or Local Union.

After these results had been attained a grave problem presented itself. The constitution of the British Medical Association was recast, and the question arose as to whether the fighting unions formed in various parts of the country should join the British Medical Association now that it gave promise of taking an active part in the economic questions that so deeply affect the material welfare of the majority of medical practitioners. Of course, the larger the union or association the greater its power if it can be made to take action, but the larger the body the more apt is it to become inert. However, the Northumberland and Newcastle Medical Union resolved to join, and a year later the County Durham Union followed this example. It was arranged, however, that, while merging with the British Medical Association, these local bodies were to retain the organisation they possessed and their officers, only instead of being isolated county unions they were to be the county committees of the general association or union. But, and this is perhaps where in practice the greatest difficulty has arisen, these old, well-tested societies, these veterans in the fight, were to become sections, within the North of England Branch of the British Medical Association, and it was felt that the activity of the old Durham and Northumberland Unions would be somewhat compromised by the comparative inertness of the larger local body of which they were now to form part.

Arrival of the National Insurance Bill.

As an example of this inertness, when the National Insurance Bill came before the public nothing was done by the branch at once. The old unions, it is claimed, would have taken up the question energetically but could not do so now, and the North of England Branch of the British Medical Association did not. Therefore, as the leaders and officials did not move, the mass took action without order and without leadership. Independent practitioners of their own initiative convoked a meeting, and that they were justified in their action was proved by the fact that some 300 medical men attended. Many members, of course, of the existing organisations were present, but they came as individuals. This meeting eventually decided to support the conditions which the British Medical Association had laid down in regard to the Insurance Bill, this being before Mr. Lloyd George had consented to give over the control of the medical services to the Health Committees.

Amalgamation of Local Medical Unions with the British Medical Association.

It is necessary to explain that the position in Northumberland and Durham was altogether exceptional. The unions which medical practitioners had formed to fight the clubs and medical aid associations before the alteration of the constitution of the British Medical Association were for the most part confined to one town and its immediate neighbourhood. It was easy to assimilate these smaller bodies with the local divisions of the British Medical Association, when they would still maintain to a large extent their former identity. The various bodies and committees of many old medical unions were maintained in the divisions of the British Medical Association, and their scope of action was enlarged by being able to send representatives to the meetings of the nearest branch, which would perhaps comprise several counties. There is strength in such an enlargement, but there is weakness also. All these secretaries of divisions are under the branch, and if the management of the branch is unsatisfactory then all the local bodies suffer in consequence. Formerly a local body failed to progress or to hold its own if its secretary and committee were not up to the mark; now all the local bodies, however competent in themselves, may suffer through the branch by which they are dominated. In regard, however, to Northumberland and Durham, the professional

unions formed in these counties were so large and important that the by-laws of the British Medical Association had to be specially modified so as to meet their case. A new hierarchy had to be created. It was agreed that the old unions, their committees and secretaries—in fact, the whole of the machinery which had been so admirably constructed and with which so many victorious battles were fought—should be maintained. Only instead of being called unions, and as they were too big to become divisions of the British Medical Association, it was decided that they should be known as the Northumberland and Newcastle Committee and the County Durham Committee. But these committees, as is the case with the divisions, were placed under the North of England Branch. Two years ago, when the annual meeting of the North of England Branch took place, no measures were taken to elect the Northumberland and Durham committees. The most vital and the most victorious organisations of this part of England were thus unfortunately flouted. Naturally a feeling of resentment has been engendered, which after smouldering for two years has now come to a head.

Feeling against the Suggested Suppression of the Old Unions.

The North of England Branch held its annual meeting at Sunderland on Sept. 14th, and I can testify that it was rather a stirring occasion. The programme as arranged consisted of business, lunch, golf, and a sailing excursion. The council of the branch met for a short time before lunch, and I am informed, for I was not present, that it was a stormy meeting. The President was instructed not to sign the minutes, and much dissatisfaction was expressed. Lunch followed, and time did not permit a further meeting to be held before the golf and the trip on the Tyne. On the other hand, those present at the meeting were determined that matters should not rest; therefore no officers were elected and no business was accomplished. It was all adjourned to another general meeting of the branch, to be convoked for that purpose and that purpose alone, early in October, to be held at Newcastle, a town which is much more accessible to the majority of members.

The Harm that has been Done.

Before concluding with this subject, and so that its importance may be better understood, it would be appropriate to give some indication of what has been lost through the effacement of the great northern medical unions. There have been a good many colliery strikes. The miners of course could not pay their medical attendants, though, if anything, there would be more rather than less illness among them. The colliery surgeons found that their incomes stopped entirely so long as the strike lasted. In this urgent position no practical steps were taken. Some of the colliery surgeons had sufficient influence with the miners to obtain extra payments when the strike was over so as to make up for the arrears accruing during the strike, but other medical practitioners obtained nothing at all, and had to work during the whole period of the strike without any payment whatsoever.

Formerly the consultants were brought into close connexion with the general practitioners through an ethical committee on which both sides were represented. The consultants in the early days of the struggle had very naturally urged that they were not going to ostracise and refuse to consult with some fully qualified practitioner because he had been condemned by a union of which they were not members. Before taking such an important step they wanted to know what it was all about. Therefore this joint committee of consultants and practitioners was formed and still exists, but apparently no longer works. As a result the list of blacklegs is no longer up-to-date, and many regrettable errors have consequently taken place. An eminent consultant related to me that on one occasion he had been telephoned to consult in regard to a patient living some distance from Newcastle. But he fancied the practitioner who sought his assistance was on some professional black list, so he telephoned to inquire from a colleague at Durham who was likely to know. The answer was that even to ask such a question on the telephone was absolutely libellous, while the only answer that could be given was that "the man ought not to be there." This clinched the matter, the Newcastle consultant refused to go, and at once informed all his colleagues of what he had done. Consequently they all likewise refused to consult with the practitioner in question. The important point is the sequel of the story. The practitioner thus boycotted was a very honourable and loyal member of a medical union; it was all a mistake, a deplorable mistake. On another occasion a consultant had received patients from, and written letters of advice to, a person who was certainly not on any black list because he was on no list at all. He was simply an unqualified practitioner. In the old days, when the medical unions were in full activity, such errors could not have happened, and the Northumberland and Durham practitioners are determined to bring them into activity again. If this can be done in coöperation with the British Medical Association, well and good. The principle of joining and participating with the work of the larger and national organisation is approved, but not to the point of sacrificing local activities.

When Does a Collier's Son Cease to be a Child?

The 9*d.* the miners pay per fortnight for medical attendance on their families includes of course the children. But when does a child, in this respect, cease to be a child? When the sons commence to work in the mines are they still to be considered as children? It is suggested that when 16 years old they should pay as adult unmarried males 6*d.* per fortnight. There is no general rule, nor will it be possible to establish such a rule till general action is taken.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Health of Liverpool: The Decline of Fever.

THE efforts made by the housing committee of the city council in rehabilitating the slums of the city are worthy of all praise. An inspection of the areas abutting on Great Howard-street, Vauxhall-road, and Scotland-road, recently made by the members of that committee, showed beyond all demonstration that unhealthy property has been transformed into light and airy tenements, based on up-to-date sanitary principles. It is an axiom that environment has much to do with the formation of character. Given better home conditions, a man or woman becomes more enlightened as to his or her responsibilities and as to the duties of citizenship. Since the demolition of insanitary property, now proceeding during the last 10 years or more, the convictions for drunkenness in the improved areas have been reduced, in some cases 50 per cent. The work of the municipality in this direction must be regarded as a means towards the mitigation of the strife and hooliganism for which Liverpool, unfortunately, has such an unenviable reputation.

At the proceedings of the health committee, which were held on Sept. 14th, the medical officer of health reported that the death-rate for the week was 27·2 per 1000, compared with 15·3 per 1000 in the corresponding week of last year. The statistics showed that during the week 130 deaths had taken place from diarrhœa, as against 30 in the corresponding week of last year. There are only 18 patients in the city hospitals suffering from typhoid fever. Special precautions are constantly taken by the health department in the matter of washing out the courts and alleys by means of disinfectants.

A report by the medical officer of health on hospital accommodation in Liverpool states that the number of beds at present available in the six hospitals is 1104. The value of the city hospitals and the immense amount of useful work performed are shown by the fact that no fewer than 6608 patients were treated within their walls during the year, the great majority being cases of scarlet fever. The advantages of the hospitals are now so fully recognised by the public that the removal to hospital of their sick dependents is insisted upon and claimed as a right. A few years ago, in cases similarly circumstanced, removals would never have been sought and would even have been resisted. Attention is drawn to the remarkable drop in the fatality from scarlet fever in the city during the last 60 years, due, in part at least, to hospital provision for the isolation of patients and to better administrative methods. The death-rate of typhoid fever had steadily declined since 1894—a decline attributable to the greater facility for isolation, an abundant supply of pure water, improved housing, and the

greater care taken in the supervision of those food supplies, more especially milk, which play an important part in the dissemination of this disease. The claims resulting from the enlightenment of the public cannot be met without expense, but it would be difficult to point to any example of necessary municipal expenditure in which the direct benefits, alike to the recipients and to the community, are more strongly marked. The treatment of cases of tuberculosis at the City Hospital, Fazakerley, has, in the opinion of Dr. E. W. Hope, met with great success.

St. Luke's Day Medical Service.

The annual service for the members of the medical profession in commemoration of St. Luke's Day will be held at St. Luke's Church on Sunday, Oct. 15th, at 3 P.M. The Lord Bishop of London will be the preacher. Members of the profession are invited to wear academic costume.

The Imbroglio at the Chester Infirmary.

The Mayor of Chester has, I am informed, written a letter suggesting that the matters in dispute at the infirmary be referred to a committee of three gentlemen. He suggests the names of Sir Horatio Lloyd, Judge Moss, and another to be chosen by the board of management of the infirmary. The Mayor has hopes that the adoption of his suggestion will put an end to a controversy which is harmful to the charity and which gives pain to many of its warmest supporters. He also hopes that it may result in the retention of Mr. B. C. Roberts, the late chairman, on the board of management.

The Prevalence of Diarrhœa at Crewe.

The medical officer of health of Crewe reported on Sept. 14th that during the last month 51 deaths took place in Crewe from diarrhœa. Persons of all ages had been affected, but the highest mortality had been amongst infants under 12 months, the number of deaths being 41. Of this number 33 were bottle-fed, which rendered the infants specially liable to diarrhœa in hot weather.

Sept. 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

St. Andrews University: 500th Anniversary.

THE celebrations of the quincentenary of St. Andrews University began on the evening of Sept. 12th with a reception by the Chancellor, Lord Balfour of Burleigh, followed by a students' torchlight procession. On the afternoon of the same day (this, however, having no official connexion with the quincentenary programme) Mr. Andrew Carnegie, who is a former Rector of St. Andrews University, was presented with his portrait in oils, painted by Mr. E. A. Walton, R.S.A. Principal Sir James Donaldson presided. There were present Lord Balfour of Burleigh, Mrs. Carnegie, Principal Sir Donald and Lady MacAlister of Glasgow, and a large number of students and others. On the 13th the proceedings commenced with a procession of students, graduates, delegates, &c., to the Church of the Holy Trinity, where the commemoration service was held. Later in the day a presentation of addresses took place in the North Hall in the presence of a great assemblage, over which the Chancellor of the University presided. After the presentation of addresses the Chancellor read the following address from the King:—

To Lord Balfour of Burleigh, Chancellor of the University.

I desire to express my regret that I cannot be present at the festival of the 500th anniversary of the foundation of the University of St. Andrews. I am deeply sensible of the national significance of the celebration of this event in the history of the oldest University in Scotland, and recognise with pride the association of my predecessors with St. Andrews.

I desire to assure the Court, Senate, graduates, and students of the University that I heartily sympathise with this auspicious event in their corporate life, and trust that it may conduce in all ways to the well-being of the University. GEORGE R. & I.

The Chancellor then welcomed the representatives from other universities who had honoured them with their presence: 100 universities and upwards of 40 other societies were represented. On the 14th Lord Rosebery, the Rector, delivered his address at half-past 10 in the North Hall, after which Sir James Donaldson was presented with an address of congratulation on his attaining 25 years of service as the Principal of the University. At the banquet in the evening Mr. A. J. Balfour delivered a splendid speech. On the 15th the proceedings were brought to a close. At St. Andrews a number of short addresses were delivered in the Volunteer Hall by distinguished guests. In the evening there was a graduates' and students' dinner in the Bell Pettigrew Museum, followed by a students' ball in the North Hall. In Dundee, to which a special train conveyed the guests, a reception was held at University College by the President, Lord Camperdown, followed by addresses in the Fleming Gymnasium by Lord Balfour of Burleigh and Lord Rosebery.

Resignation of Professor Finlay.

Professor David W. Finlay, who occupies the chair of the Practice of Medicine at Aberdeen University, has intimated that he intends to resign his professorship at the end of the present year. His resignation will come before the University Court at its next meeting, which will be held on Oct. 10th. Professor Finlay was appointed to the chair of Medicine at Aberdeen University in 1891 on the death of Professor J. W. F. Smith-Shand, and has thus held the post for 20 years. A native of Glasgow, Professor Finlay was educated in that city and in Vienna. He was for some time physician and lecturer at the Middlesex Hospital in London, and also physician to the Royal Hospital for Diseases of the Chest and to the Royal Scottish Hospital. He has also been inspector of examinations in medicine to the General Medical Council, upon which body he represented Aberdeen University. In the affairs of Aberdeen University Professor Finlay has taken a keen and practical interest. In September, 1901, he represented the University at the bi-centenary celebrations of Yale University. In 1907 he was appointed Dean of the Faculty of Medicine, while only last week he represented Aberdeen University at the Christiania University celebrations, and was one of those on whom the centenary medal was bestowed. In 1908 he was appointed one of the honorary physicians to the King in Scotland in place of the late Sir Thomas McCall Anderson, and in June of last year he became a physician-in-ordinary to King George.

Appointment of Assistant Medical Officer to Kingseat Asylum.

At a meeting of the Aberdeen City District Lunacy Board held on Sept. 12th, Dr. Ian Ogilvie of Preston was appointed assistant medical officer of Kingseat Asylum at a salary of £120 per annum. There were only three applicants in answer to the board's advertisement, the other two being ladies. Considerable discussion took place over the appointment, several of the members being of the opinion that the post should be re-advertised at an increased salary. The motion to appoint Dr. Ogilvie was eventually carried by 25 votes to 4.

The Royal Infirmary, Dundee.

The quarterly meeting of the governors of the Royal Infirmary, Dundee, was held on Sept. 15th. In submitting a report of the work done in the institution during the last quarter the chairman said there had been 870 in-patients, as compared with 956 for last year's corresponding quarter, and 5205 out-patients, as compared with 4224. There were 383 patients in the convalescent home, compared with 375 last year, and in the sanatorium 11 adults and 33 children. The work done at the sanatorium was excellent and increasing, and the directors had decided that the laundry, which the old board of governors had had to close owing to lack of funds, would be reopened. The workshop given by an anonymous donor was in course of erection. Regarding the National Insurance Bill, the chairman said that when it was in operation there would undoubtedly be a falling off of out-patients at the infirmary and an increase of in-patients.

Outbreak of Diphtheria at Forfar.

Owing to an outbreak of diphtheria at Forfar the school board has given instructions for certain classes in the West Burgh school to be closed.

Sept. 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Report on the Dublin Hospitals.

THE Board of Superintendence of the Dublin Hospitals has recently issued the annual report dealing with those hospitals which are in receipt of Government grants. There are nine of these in Dublin—three general hospitals, viz., Dr. Steevens', the Meath, and the House of Industry; two lying-in hospitals, the Rotunda and the Coombe; and four

other special hospitals, the Westmorland Lock, the Cork Street Fever, the Royal Victoria Eye and Ear, and the Royal Hospital for Incurables. Two of these, the Westmorland Lock and the House of Industry, are practically maintained by Government. They receive grants respectively of £2600 and £7600 a year. The grants to the other institutions have been made at various times and without any system. Dr. Steevens' Hospital, which keeps wards for soldiers' wives and for the constabulary, gets £1300 a year. The Royal Victoria Eye and Ear receives £100. The Board of Superintendence expresses the opinion that the hospitals fulfil their objects in an economical and thorough way. The probable effect of the National Insurance Bill on voluntary hospitals is discussed as follows:—

> Hitherto the public have looked on the labouring man disabled for work as a fit object for charity. They have subscribed and left legacies to hospitals because it was known that through the wards of the hospital and the special dispensaries attached to them lay the smoothest, shortest, and most economical road to recovery. It is unlikely, should the State arrange for the care of the labouring classes when incapacitated by sickness, that the charitably inclined will continue to subscribe to the same extent. Now, there is no doubt that for the maintenance of hospitals the system of voluntary aid, supplemented by State aid, yields the best and most economical results. By it the services of men of the highest standing are put within easy reach of the poor, both in the wards and in the dispensaries. We think this system is in danger, and that if it is once allowed to collapse it may not be possible to reconstitute it. This would be a serious thing for the poor, a serious thing for the progress of science, a serious thing for the taxpayer, and for the training of gentlemen for medical service. The practice of medicine is advancing by specialisation. Each class of disease has its department in an hospital. It is not too much to say that a club doctor, responsible for the health of a large number of work-people, will, in a great majority of the cases, have to call on the hospitals or their dispensaries for help. On what terms will this be given? If the voluntary aid system is abolished it must mean a suitable remuneration for all medical service. We are of opinion that a system on such a foundation would not work as well or as economically as does the present one.

Water-supply of Irish Towns.

The scarcity of water to which reference was made in a previous letter in THE LANCET of Sept. 9th is widespread and serious. Dublin is not so badly off as some other places owing to the recently increased catchment areas and new reservoirs, but the necessity for economy is being enforced by the corporation. In Belfast the supply has been again curtailed by cutting it off between 6 o'clock at night and 9 o'clock on the following morning. The special liability of Belfast to this unfortunate shortage is due to the absence of a sufficient reservoir for the supply, which comes from the Mourne Mountains. The building of such a reservoir was part of the scheme as originally adopted, but, in the first place, the difficulties in the way of construction and the expense involved proved to be so great, and, in the second, the revenue at the disposal of the board had been so freely expended in other directions, that the Water Board felt justified in postponing the construction of the reservoir. The Act of Parliament, under which power had been taken in 1893, amongst other things, to construct a reservoir in what is called the Silent Valley, on the Kilkeel river, will expire in 1913, and as the present dry summer has demonstrated the absolute necessity for the construction of a great storage reservoir, the Water Commissioners have decided to promote a Bill next Session for an extension of the time for the construction of these works and for raising the required capital. In Derry the matter was discussed at a meeting of the corporation on Sept. 18th, when the very dangerous state of the city was pointed out. In Lisburn the principal source of water-supply to the town is exhausted and another pond is being used. The water from this source, which is regarded as impure, is also failing, and now disused wells are being opened. In the glens of Antrim, as a result of the scarcity of water, all kinds of cattle, sheep, &c., have gone down in price. No one ever remembers such a situation in Ulster. At the time of writing the drought still continues.

Dungannon Workhouse Infirmary.

As a result of the Local Government Board's report on the management of the workhouse infirmary (see THE LANCET, Sept. 16th, p. 859), the board of guardians, at their meeting on Sept. 14th, decided that the services of the head nurse be dispensed with from that day month. The motion to do this was carried by 27 votes to 12.

Death of Dr. W. Langford Symes.

Members of the profession in Ireland have learnt with much regret of the death of Dr. W. Langford Symes, who formerly practised in Dublin as a specialist in the diseases of children. In his younger days he held a dispensary appointment in county Wicklow, but desiring a wider scope for his energies he resigned his post and studied children's diseases at the Great Ormond-street Hospital, London. Returning to Ireland, he settled in Dublin, and obtained the Fellowship of the Royal College of Physicians of Ireland in 1898. For some years he edited the *Journal of the Irish Medical Association*. A few years ago his health became unsatisfactory, and he left Dublin to take up practice at Landrindod Wells. His death occurred in London on Sept. 13th. Dr. Symes was a modest but energetic man, of much real kindliness, who made many friends.

Memorial to Dr. Rutherford of Ballinasloe.

A movement is on foot to establish a memorial to Dr. William Rutherford of Ballinasloe, whose death occurred a few months ago. It is proposed to erect a monument in the town where he spent his professional life, and also to provide for the education of his youngest children. Dr. Rutherford was a cultured and capable physician, whose name was held in honour by the profession, not only of his own district, but of the entire country. The present monument on the part of the public is an unusual honour to be paid to a medical man.

Sept. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Hygiene of Nutrition.

FOR about two years considerable uneasiness has existed throughout France over the increasing difficulty of procuring the necessaries of life at a reasonable price and of a satisfactory quality. A variety of causes has contributed to raise the price of many of the most commonly used foodstuffs. The floods of last year have diminished not only the quantity but also the quality of fruits and vegetables, and domestic animals being perforce less well nourished, the quality of their meat also has suffered, while a rise in the price of meat, milk, and eggs has taken place. This summer, with its heat, and particularly with its drought, has completed the work begun by the floods, so that now for some weeks the price of many of the most indispensable commodities has reached a considerable height on account of insufficient production. The exports remaining much about the same, the first effect of the raised prices has been felt in France itself. Sugar especially has risen in price to an entirely anomalous extent and is still on the rise, owing to the complete failure of the beet crop in many regions devoted particularly to its cultivation. This distressing state of things, moreover, has caused in towns labour troubles among the classes for whom the rise in prices is indeed a calamity, and it has become necessary on all sides to seek a remedy for this state of affairs. It is to be feared that the dearness of raw material will result in extensive adulteration, to the detriment of the general health. This will further augment the misery of the poor if the increase in the cost of provisions necessitates parsimony in providing. The labour revolts, restrained at first but constantly becoming bolder, may have the happy result of finding a way to reconcile individual interests for the public welfare.

The "Août as."

By this name are designated in France certain minute red insects, which are found in abundance during very hot summers in the country, and particularly in the fields. When walking, and especially when sitting on the grass, no bite is perceived, nor is one conscious of the presence of these insects, for they are too small for observation. But at home when night comes their bites are felt and cause great distress. The insects, unlike fleas, mosquitoes, and similar creatures, are not satisfied with inflicting a single bite, they burrow under the skin and constitute a sort of timepiece, for during the day they are quiet, but towards evening they give rise to insupportable pricking, which continues during some five or six days, until, in fact, the insect dies. The bites are sometimes so massed and so painful as to simulate a true skin disease, and cases have been known in which the unfortunate victim, ignorant of what is the matter with him, has consulted medical man after medical man who gravely prescribe for some skin

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disease, naturally without effect, until the patient happily falls into the hands of one who, recognising the nature of the trouble, is able quickly to relieve him.

Sept. 19th.

*** From the prominence given by our correspondent to the attacks of what are popularly termed "harvest bugs" we assume that these troublesome parasites are not as well known in France as in England, and yet some of our earliest information concerning them is of French origin. A full description of *prurigo du Rouget*, or erythema following the attacks of leptus autumnalis, was given 30 years ago in Mégnin's "Les Parasites et les Maladies Parasitaires chez l'Homme et les Animaux Domestiques." Dr. J. C. Thresh noted in our columns in the course of an article on the subject an outbreak of erythema in France described in the *Sante Publique* in 1872, where the sufferings of certain agricultural labourers led to judicial proceedings. In Brocq's "Diseases of the Skin" the action of the leptus autumnalis is also described. We refer our readers to a very full paper on the natural history and dermatitis due to these parasites, communicated by Dr. William MacLennan to the columns of THE LANCET on Dec. 16th, 1905.—ED. L.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

Montreal Vital Statistics.

THE annual report of the Health Department of Montreal, recently issued by the medical officer of health, Dr. Louis Laberge, shows that the death-rate of Montreal increased slightly in 1910, while the number of births decreased. The decrease in births amounted to 0·70 per 1000 and marriages increased by 0·56 per 1000. The births numbered 16,616, or 36·45 per 1000, as compared with 37·15 of the previous year, and the marriages 4386, or 9·62 per 1000 inhabitants, as compared with 9·06 of the year before. Figures are supplied in tabulated form which tend to show that the death-rate of Montreal has not varied greatly for a number of years. In 1905 it was 22·96; in 1906, 22·98; in 1907, 22·56; in 1908, 22·95; in 1909, 22·03; and in 1910, 22·40. Neither has the birth-rate exhibited much change during the same period. In 1903 it was 36·08, and in successive years it has been: 35·90, 35·84, 37·35, 36·05, 38·43, 37·15, and in 1910, 36·45.

Contagious Diseases in Montreal in 1910.

Dr. J. E. Laberge, chief of the Contagious Diseases Department of the Montreal Board of Health, accounts for the increase in the cases of contagious diseases in 1910, which is noted in the report of the department, by stating that medical men are complying more regularly with the provincial regulations. The report for 1910 shows that the number of cases of contagious diseases was in that year 8749, as compared with 6494 for the year before, or an increase of 2255. Dr. Laberge also draws attention to the increasing number of cases of tuberculosis notified, which, in his opinion, is a matter requiring immediate notice. The cases of tuberculosis registered at the department in 1907 were 919; in 1908 the cases were 1000; in 1909 the registrations were 1114; and in 1910 these had increased to 1336.

Insanitary Conditions in Montreal.

In commenting on certain features of the above-mentioned report Dr. Louis Laberge recommends that in the future the city should not permit the opening of any street which is not supplied with a system of sewers and water mains. He further considers that tanneries, soap factories, and establishments in which green hides are cured should not be tolerated in Montreal itself, because if sanitary regulations are relaxed they become a nuisance. The construction in different parts of the city of four garbage incinerators for house refuse is recommended. Dr. Laberge suggests that further bathing facilities shall be provided. On one sin of sanitary omission nothing is said. The stranger within the gates of Montreal, especially if he comes from Europe, is greatly struck and frequently inconvenienced by the lack of public conveniences for men and women. In Montreal there are no public lavatories, with the exception of very inadequate accommodation at the railway stations. This failure on the part of the municipal authorities to provide public lavatories is not only a source of great inconvenience, but is to some extent a matter detrimental to the health of the city.

Cocaine in Montreal.

Cocaine appears to be increasingly used in Montreal. According to the annual report of the superintendent of police, 150 arrests have been made since July of this year on charges of improperly using or selling the drug.

Canadian Public Health Association.

The first annual meeting of this association will be held in Montreal on Nov. 21st to 23rd. There is to be a symposium on housing and town planning, as well as one on sewage installations.

Toronto's Slums.

Dr. Charles J. Hastings, medical officer of health of Toronto, has recently prepared an exhaustive report on Toronto's slums based upon visits of inspectors to 4693 houses. He advocates expropriating an area surrounding the city which comprises an acreage of 17,920. Of 2051 families visited in the central section of the city, 1275 families lived in four or more rooms, 348 families in three rooms, 227 families in two rooms, 139 families in one room, 61 families in basements, and 1 family in a cellar. 108 of these houses were pronounced unfit for human habitation. There are 92 tenement houses in Toronto.

A Hospital for Inebriates.

The Ontario Society for the Reformation of Inebriates aims to promote the reformation of indigent inebriates in Ontario by making use of the public hospitals of the province and by combining therewith the Massachusetts probation system. In Toronto a medical officer and a probation officer attend the police court, and offer medical treatment and help to the inebriate. Medical treatment is given either at the home of the prisoner or in the office of the medical man. But the society is hampered in its work by the need for a special hospital entirely devoted to the treatment of inebriates. The Ontario Government has this project under consideration, and some such institution may be looked for in the immediate future.

The Laurentian Sanatorium.

A few weeks ago the new Laurentian Sanatorium at Ste. Agathe des Monts, province of Quebec, was officially opened. Situated about 100 miles from Montreal, overlooking one of the beautiful valleys of the Laurentians, where the climate is comparable to that of the famous Saranac Lake institution, this sanatorium commands one of the finest situations in all Canada. The building and equipment enhance the value of the situation. The building has accommodation for 50 patients and is so constructed that wings can be added at any time. Amongst those who attended the opening ceremonies were Dr. Baldwin and Dr. Kinghorn of Saranac Lake, Dr. Adami and Dr. Lafleur of Montreal, and Dr. Otis of Boston. Under the auspices of the Laurentian Society, which inaugurated this work, Ste. Agathe des Monts will be a centre in the province of Quebec for the scientific treatment and study of incipient tuberculosis. In Canada, so far, most of the practical work in fighting tuberculosis has been carried on by private philanthropy. Governments should well consider a remark of Dr. Kinghorn in his address: "Any patient, taken in time, is practically sure of being cured."

Inspection of School Children in Ontario.

The Ontario Medical Council passed the following resolution with regard to the inspection of school children at its recent annual meeting:—

That the Council, in the interests of school children, respectfully recommend to the Minister of Education the advisability of taking a physical census of the school children, with the view of comparing the health and physical condition of children in urban and rural districts; and in the meantime further recommend the training, as in England, of the students in the model schools, normal schools, and faculties of education in such a knowledge of school hygiene as will enable them to recognise common defects and diseases of children.

Fire at the Hamilton Hospital for the Insane.

The Hospital for the Insane at Hamilton, Ontario, was partially destroyed by fire on August 1st. Eight of the inmates perished in the flames. The hospital had a capacity of 1220, and there were in residence on Oct. 1st last 1223 patients.

Sept. 11th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The Failure of the Monsoon.

ONLY those who have been in a famine-stricken area can realise what the failure of the monsoon means. The "trade winds" may be regarded as divided into a western and an eastern half so far as India is concerned. The eastern half has not failed, but the western wave may now be said to have failed more or less completely, as it is now the third week of August and there has been very little rain in the western areas of India. The Central and United Provinces and the Punjab are chiefly affected. There must be famine now in some areas, though, of course, we are more prepared for this, and such irrigation works as there are have done much to lessen it. The heat has been continuous and intense. In some parts of the Punjab the *mean* for the last three months has been over 106° F. in the shade. The humidity, of course, has been only about 52. The chances are against malaria. The cause of the monsoon failure is most probably related to the very late, heavy fall of snow in the Western Himalayas, which did not occur in the Eastern Himalayas. The cold current of air has prevented the trade winds taking their usual course, and so we find the lower West of India having a large amount of rain.

Malaria in Bombay.

Dr. C. A. Bentley's report on malaria in Bombay and the Government resolution thereon, which were referred to in THE LANCET of Sept. 2nd, p. 732, form the chief subject of medical interest in Bombay. The report showed an appalling degree of malaria, and Dr. Bentley traced this to the wells in and about houses. The report showed a large percentage of infection among Parsees. It has now been discussed by the corporation. As usual with such reports, Indian medical practitioners of the corporation were not behind in giving vent to criticisms. Much of this criticism did not reflect on the speakers. Dr. Sukhia agreed with Dr. Bentley that fever was rampant among the Parsees, but he did not agree with the figures for the incidence of spleen index. He thought that Dr. Bentley had applied himself to his work with a preconceived idea that the Parsees suffered from malaria on account of the wells in their houses. In his opinion the works at the docks, &c., were the chief causes of the outbreak in 1908 and in previous years. Mr. Mistry thought that the report was intended to whitewash the report of the special commission appointed by the Government of India at Mian Mir. Sir Balchandra Krishna thought malaria chiefly due to works carried out by the Part Trust and railways, and that they should be called on to contribute substantially to the cost of measures decided upon. Dr. Dadachanji disagreed with Dr. Bentley's charges against the wells as the chief cause. Mr. D. P. Vacha said some hard things. He objected to any statutory powers being given to any inspector to enter houses. The proposition before the corporation, to appoint a committee to consider the action to be taken to stamp out the scourge, was carried.

Three Years' Progress in Bengal.

The triennial reports of the year are now published. The Inspector-General of Civil Hospitals in Bengal shows how malaria is being fought in that province. A committee was established, investigations were carried out, and quinine was sold at 10 grains to the pice. In 1910, 1,570,666 packets and 1,181,140 tablets were sold. Sub-assistant surgeons were deputed to give medical relief in the worst areas. Instruction on the cause and treatment of malaria is about to be tried in schools. During the triennial period 24 new dispensaries were opened under Government supervision. The Inspector-General points out that the medical requirements of the province have in no sense as yet been adequately met, and in some districts—e.g., Muzaffarpur with one dispensary for 227,566 persons—the population is out of all proportion to each dispensary available for their use. The reason for this deficiency is lack of funds. Colonel Harris pays a tribute to medical missions, but these alone do not suffice to fill the gap which exists.

Eastern Bengal and Assam.

The sanitary report for this province for 1910 shows a birth-rate of 37·96 per 1000 and a death-rate of 33·71 per 1000. Dr. Bentley has been appointed as a Deputy Sanitary Commissioner for five years, and has been given a special medical staff to carry out measures against malaria. The operations at Dinajpur and Jalpaiguri were not successful.

Professorships at Lucknow.

The new Medical College at Lucknow is to have five whole-time professors, of whom four will be officers of the Indian Medical Service. Of these, the professor of bacteriology and pathology will, in addition, be the chief surgeon. He will also carry out all post-mortem examinations. There are to be two lectureships—viz., in forensic medicine and materia medica, and these are to be given to military assistant surgeons. These do not possess *registrable* qualifications. The General Medical Council may take note of this, and examining bodies in England will have to awake to the fact that certain class certificates given in India should not be accepted for degrees in Britain.

August 26th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Hong-Kong Medical and Sanitary Report for 1910.

THIS report, which has just been issued, compares favourably with those of former years and reflects credit on the public health authorities, who, in the midst of a continually changing and overcrowded population, have to cope with more difficulties than occur in almost any other British colony. Last year the rainfall was 70 inches, considerably below the average of the past 20 years. The total population of the colony is 350,975, of whom 330,169 are Chinese and 11,532 are Europeans and Americans. Among Chinese the death-rate was 22·50 per 1000, and among non-Chinese it was 10·04 per 1000, which contrasts very favourably with that of the United Kingdom, though it must be borne in mind that over half the population is between the ages of 20 and 45. With reference to the statistics I have given in previous notes of the high infant mortality in Peking, it is interesting to see that among the Chinese the known deaths of infants numbered 2495, while only 1253 births were registered. This surplus is explained by the fact that numbers of children are being brought into the island from the mainland, but the figures are significant enough to show the huge wastage of child life in the Far East.

Respiratory diseases.—Phthisis alone accounts for 780 deaths, of which 765 were Chinese. Pneumonia caused 1165 deaths, of which 1153 were Chinese. The deaths from phthisis among Chinese were 10·3 per cent. of the total deaths in that community. Considerable efforts have been made to put a stop to the inveterate habit of spitting in public buildings, dwellings, and on footpaths, wharves, &c. At the instance of the Government an anti-spitting league was formed by leading Chinese, which has been active in its endeavours to check this obnoxious practice.

Nervous diseases.—There were 257 deaths of infants less than one year old from tetanus, trismus, and convulsions.

Malarial fever.—The total number of deaths was 591, of which nine only were those of non-Chinese. Anti-malarial measures have received considerable attention from active sanitary staffs, over $30,600 having been spent in the year on drainage and on oiling mosquito-breeding haunts. The incidence of malaria was somewhat higher than in previous years, and one of the explanations given for this is the greater uniformity of the rainfall during 1910, when there was an almost daily succession of small showers during the rainy season, sufficient to keep the breeding-pools supplied with water, and an absence of heavy rain storms, which have the effect of scouring out the many rock pools that constitute the greatest difficulty in regard to anti-malarial measures in the colony.

Beri-beri.—566 deaths occurred, and the cause of this disease is attributed in Hong-Kong to the eating of white or polished rice—a different view to that of Shanghai, where the public health authorities are inclined to lay the cause at the door of body vermin.

Plague.—The incidence of plague was very light, only 25 cases, with 23 deaths, being recorded, of which four were imported. Active rat catching and collection were carried on throughout the year.

Typhoid fever.—There were 67 cases of this disease, with a case-mortality among Europeans of 12 per cent. In most of the cases the infection was probably contracted by eating salads of raw vegetables grown in Chinese market gardens, where it is customary to water and manure the plants with diluted urine and night soil.

In the Tungwah Hospital, where patients on admission can elect to be treated by European or Chinese methods, there is annually a big balance of success in favour of western medicine. In spite of that fact, many Chinese persist in preferring their own system, as shown by the greater number of admissions to the native side of the hospital. During 1910 there were 1699 who asked for European treatment, of whom 199 died, while of 2062 who underwent Chinese treatment 747 died. A large number of post-mortem examinations were carried out, and the statistics of the bacteriological laboratory show that it is in a high state of efficiency.

Abscess for Ten Years following Abortion.

A remarkable case is reported by Dr. A. C. Hutcheson of Kashing, Chekiang, of a Chinese woman who complained of acute abdominal pain and had more or less constant vaginal discharge. A distinct mass, exquisitely tender, was found in the lower right quadrant of the abdomen, and on vaginal examination a hard body was felt projecting from the cervix about a quarter of an inch. When this was pulled out it was found to be a Chinese chopstick eight inches long, with sharpened end. Its withdrawal was followed by the discharge of bloody pus of the foulest odour. The patient was absolutely ignorant of the presence of a foreign body in her uterus. Dr. Hutcheson then learnt that ten years before she had called in a Chinese midwife to perform an abortion, having had three children in rapid succession and desiring a rest from her labours. During all this time she had suffered from severe attacks of abdominal pain, sometimes with, sometimes without, fever, but almost constantly with foul bloody discharge. During the attacks she was confined to bed. She was able to attend to her work. A laparotomy was performed, and on opening the peritoneum fluid blackish pus gushed out. Tubes were introduced through the abdominal wound and thorough vaginal drainage was established. Some weeks later the patient left the hospital cured. Ten years seems a long period of time and must almost be a record for septic inflammation following perforation of the uterus. It also seems strange that in ten years nature did not establish an effective barrier to the absorption from the abscess cavity, but allowed the woman to suffer from the toxins developed all that time. The chopstick no doubt acted as a drain whenever the tension became too great in the abscess cavity, thus accounting for the intervals of freedom from severe pain. Dr. W. H. Venable of Kashing last year removed a chopstick a foot long from a patient's vagina. This one had been in 13 months. It was pushed through the posterior fornix up into the posterior part of the pelvis.

Peking, August 15th.

Obituary.

JAMES REID, F.R.C.S. ENG., L.S.A.

BY the death of Mr. James Reid, which took place on Sept. 12th, Canterbury has lost a citizen to whom it owes much, for the improved sanitary condition of that city is due in a large measure to his work. He was born in 1821 at Hampstead, and after serving as apprentice to a medical practitioner, he studied at St. Bartholomew's Hospital and was one of the first to live in the residential college which was opened with Sir James Paget as Warden. In 1843 he qualified by taking the Membership of the Royal College of Surgeons of England, and started in a joint practice at Dover. In the following year he became a Licentiate of the Society of Apothecaries of London, and in 1876 was elected a Fellow of the Royal College of Surgeons. In 1846 he removed to Canterbury, where he was soon actively occupied in all that concerned the medical interests of the city. He rendered invaluable services to the Kent and Canterbury Hospital, to which he was senior surgeon for many years and afterwards consulting surgeon. He was formerly surgeon to H.M. prison at Canterbury. Mr. Reid was one of the promoters of the East Kent Natural History Society, and for many years he was its honorary librarian. The Canterbury Nurses' Institute also owed much to him, as joint founder and honorary secretary and treasurer.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. G. Jochmann of Breslau has been recognised as *privat-docent* of Medicine.—*Bonn:* Dr. C. Menge of Heidelberg has been appointed to the chair of Midwifery and Gynæcology in succession to Dr. H. Fritsch, resigned.—*Breslau:* Dr. J. Pohl of Prague has been appointed to the chair of Pharmacology in succession to Dr. W. Filehne, resigned.—*Florence:* Dr. E. Marri has been recognised as *privat-docent* of Ophthalmology.

Dr. T. B. Hyslop will deliver the first Hunterian lecture before the Hunterian Society on Oct. 11th at 9 P.M. He has chosen as his subject, "Intracranial Murmurs and their Relation to Tinnitus Aurium."

Mr. Alexander Gray, M.B., C.M. Glasg., a well-known practitioner in Bradford, died on Sept. 15th. While present at an operation at the Bradford Royal Infirmary he was taken suddenly ill and expired almost immediately.

THE Lettsomian lectures of the Medical Society of London will be delivered at the rooms of the society, 11, Chandos-street, Cavendish-square, W., on Feb. 5th and 19th, and March 4th, 1912, by Dr. Archibald E. Garrod, F.R.S., who has taken as his subject Glycosuria.

LITERARY INTELLIGENCE.—With the view of making the eleventh edition of "Quain's Anatomy" more easily accessible to students Messrs. Longmans, Green, and Co. are re-issuing the volumes already published at lower prices. Vol. I., Part 2, Histology, by Professor Schäfer, is expected to appear in the autumn.

THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—The opening of the seventieth session of the School of Pharmacy will take place at 17, Bloomsbury-square, London, W.C., on Wednesday afternoon, Oct. 4th, at 3 o'clock, when the presentation of the Hanbury gold medal will be made by the President, and the inaugural sessional address will be delivered by Dr. J. Macdonald Brown.

REMEDIES FOR BABY-FARMING EVILS.—Miss F. Zanetti, the inspector in the township of South Manchester, read at Berlin a paper on the Protection of Illegitimate Children Nursed for Hire, at the Third International Congress for the Study and Prevention of Infantile Mortality. The following were among the points that she made. The protection afforded by the State to infants nursed for hire should not be confined to illegitimate children; as they, however, form probably about nine-tenths of the total number it may be assumed that the recently secured legislation in England is intended chiefly for the benefit of those unfortunates. If boards of guardians availed themselves of their full powers the condition of children nursed for hire would be greatly improved and baby-farming of the worst type suppressed, provided especially some amendment was obtained to make registration compulsory when children are received for reward, without specifying the time (at present 48 hours) during which they may be kept without notification. "Middlemen" between persons anxious to dispose of children and others wishful to adopt infants with whom a substantial premium is paid require suppression. It would appear that there are a number of people who make money by adopting infants for sums of money, passing on such infants within the 48 hours during which a child may be nursed without the sanction of the authorities, at the same time retaining a portion of the premium received. The adoption of the amendment regarding registration above mentioned would check the traffic and at the same time provide supervision for the large number of infants nursed by day only, who are frequently left in charge of very old and incapable nurses during the hours when the mothers are at work.

MISSIONARY EXHIBITION.—It is proposed by the Society for the Propagation of the Gospel to hold a large Missionary Exhibition at the Church House, Westminster, during June, 1912. At this exhibition one of the special features will be the Medical Missions Department. A sub-committee has been formed, calling itself the "Mission Hospital Committee," including a number of the leading medical men in London. The chairman is Sir Francis Champneys. Mr. James Anderson Robertson, secretary of the Medical Missions Department, S.P.G., and interim secretary of the Mission Hospital Commitee, writes from 15, Tufton-street, Westminster, S.W., to appeal to medical men, missionaries, and others throughout the country, who are in possession of interesting medical curios of other lands, to give them on loan during the time the exhibition is being held. The greatest care will be taken of them, and they will be returned to their respective owners immediately the exhibition is over.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.—The election is announced of Dr. Theodore C. Janeway to fill the vacancy on the board of scientific directors of this institute caused by the death of Dr. C. A. Herter. The board has entire control of the scientific work done by the institute. Its other members are Dr. William H. Welch of Baltimore, Dr. Theobald Smith of Boston, and Dr. L. Emmett Holt, Dr. Herman H. Biggs, Dr. T. Mitchell Prudden, and Dr. Simon Flexner, all of New York. Dr. Janeway is a graduate of the Sheffield Scientific School of Yale University, and took his M.D. at the College of Physicians and Surgeons (Columbia University) in 1895. Since 1909 he has been Baird Professor of the Practice of Medicine at the College of Physicians and Surgeons, and is on the medical staff of the Presbyterian Hospital, New York. He is also secretary and treasurer of the Russell Sage Institute of Pathology. Dr. Janeway has done important work on the subjects of blood pressure, diseases of metabolism, and cardio-vascular changes in nephritis.

LIFE ON THE OXO CATTLE RANCHES.—A very interesting series of kinematograph pictures illustrating farm life in the Argentine was shown to a selected audience of journalists on Sept. 18th, at the Oxo factory of the Lemco and Oxo Company in Park-street, Southwark Bridge, London, S.E. The incidents in the daily life on the Oxo cattle ranches were admirably portrayed and most realistically produced. The demonstration served to show the magnitude of the company's industries, and the care which is taken to provide pure and standard products. Mr. Charles F. Gunther, the chairman of the company, gave some interesting and remarkable figures in regard to the enormous herds of cattle belonging to the company and some particulars also showing how free from disease these animals were which spent their life entirely in the open air. He further quoted figures bearing upon the food value of grass and the quantities of grass and water daily consumed by 350,000 head of cattle. Some calculations of this kind were also made by our Special Commissioner some years ago on the occasion of his visit to the Liebig cattle farms in Argentina.

THE TREATMENT OF TUBERCULOUS JOINTS: A PUBLIC SPIRITED EXPERIMENT AT BRIGHTON.—The experiment at Brighton of treating patients suffering from tuberculosis of bones and joints at the sanatorium sanctioned by the Brighton town council in the early part of last year at the request of the medical officer of health, Dr. Duncan Forbes, is evidently meeting with success. The sanitary committee is pleased with the results, inasmuch as it has just sanctioned the experiment being continued for a further period of 12 months. Dr. Duncan Forbes in his report to the committee says: "Since March 8th last 2 cases of hip disease have been discharged cured and without deformity while 1 case of knee-joint disease was discharged for operation as it showed no material improvement. There are now 9 tuberculous joint cases in the sanatorium, 4 of spinal disease and 5 of hip-joint disease. Of these cases, 1 of hip and 1 of spinal disease are cured and will be discharged in a few days. Of the remaining 7 cases, 3 have been in hospital for over a year and still require some months' treatment, and 4 have been in hospital for a shorter period and are progressing satisfactorily." The estimated cost of the experiment for 12 months is put at £320.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ACOMB, L., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Newport County Hospital.

HUNTER, C. S., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Carnoustie District of the county of Forfar.

MARSHALL, C. B., M.B., Ch.B., D.P.H. Vict., has been appointed Assistant House Surgeon at the Ancoats Hospital, Manchester.

MCDONALD, N., M.B., Ch.B. Vict., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior House Surgeon at the Ancoats Hospital, Manchester.

MORETON, R., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Overton District of the county of Flint.

MOSS, LOVEL, M.B., Ch.B. Vict., has been appointed Assistant House Surgeon at the Warrington Infirmary.

TITCOMBE, R. H., M.D., Ch.B., D.P.H. Vict., has been appointed House Physician at the Ancoats Hospital, Manchester.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Senior Resident House Surgeon. Salary £100 per annum.

BIRMINGHAM, UNIVERSITY OF.—Lecturer in Physiological Department. Salary £150 per annum.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £140 per annum, with rooms, rations, laundry, and attendance.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary at rate of £75 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Physician, unmarried, for six months. Salary at rate of £100 per annum, with board, residence, and washing.

BRISTOL ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

BRITISH LYING-IN HOSPITAL, Endell-street, W.C.—Physician.

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CAPETOWN, SOMERSET HOSPITAL.—Two Assistant Medical Officers. Salary £200 per annum, with rations and quarters.

CHARTHAM, NEAR CANTERBURY, KENT COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £192 per annum, with quarters, washing, &c.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board washing, and attendance.

DERBY BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, apartments, laundry, &c.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons, all for six months. Salary in each case £50 per annum, with board, residence, and washing. Also Honorary Anæsthetist.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea provided.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Ten qualified Clinical Assistants.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Physician and Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

GRIMSBY AND DISTRICT HOSPITAL.—Locum Tenens for two months. Salary £4 4s. per week, with board, lodging, washing, &c.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Medical Officer. Salary 25 guineas per annum.

HARTSHILL, STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £50 per annum, with residence, board, and washing.

INVERNESS DISTRICT ASYLUM.—Junior Assistant Physician. Salary £120 per annum, with board, lodging, and laundry.

KING'S COLLEGE HOSPITAL, London.—Sambrooke Medical Registrar.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with residence, board, and laundry.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

LEWES VICTORIA HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary £120 per annum, with apartments, board, washing, attendance, &c.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £75 per annum, with board, residence, and washing.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—Assistant Bacteriologist. Salary £250 per annum.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—Honorary Assistant Surgeon.

LIVERPOOL WORKHOUSE HOSPITAL, Brownlow Hill.—Two Resident Assistant Medical Officers. Salaries £120 and £100 per annum respectively, with apartments, &c.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £120 per annum, with rooms, attendance, board, and washing.

MANCHESTER ROYAL INFIRMARY.—Surgical Registrar. Salary £70 per annum.

MANCHESTER WORKHOUSE HOSPITALS, Withington.—Third Assistant Resident Medical Officer. Salary £100 per annum, with rations, apartments, and attendance.

MELROSE, ROXBURGH DISTRICT ASYLUM.—Assistant Medical Officer. Salary £160 per annum, with board, lodging, and washing.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon for six months. Salary in each case at rate of £52 10s. per annum, with board and residence.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRESTON COUNTY ASYLUM, Whittingham.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

PRESTWICH COUNTY ASYLUM, near Manchester.—Pathologist and Assistant Medical Officer. Salary £200 per annum, with board, apartments, attendance, and washing.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and washing.

ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Resident House Surgeon, unmarried, for six months. Salary £100 per annum, with board, residence, and washing.

ROYAL SUSSEX COUNTY HOSPITAL.—Two Assistant House Surgeons, unmarried. Salary in each case £80 per annum, with board, apartments, and laundry.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Honorary Dental Surgeon.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Honorary Gynæcologist.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich Grove, S.E.—Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry. Also Honorary Assistant Registrar.

WALSALL AND DISTRICT HOSPITAL.—House Physician and Casualty Officer. Salary £80 per annum, with board, residence, and laundry.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with rations, washing, and apartments.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, W.—Clinical Assistants. Also Three Non-resident Assistant House Surgeons, each for three months.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Dungannon, in the county of Tyrone.

Births, Marriages, and Deaths.

BIRTHS.

DAVIES.—On Sept. 10th, the wife of Langford George Davies, M.A., M.B., B.C. Cantab., of Broad Clyst, Devon, of a son.

MARRIAGES.

BEAUMONT—KING.—On Sept. 16th, at All Saints' Church, Weston-super-Mare, Noel Charles Beaumont, M.R.C.S., L.R.C.P., to Ethel Mary, eldest daughter of Mr. J. J. H. King, of Gordon-road, Weston-super-Mare.

DEATHS.

DILLON.—On Sept. 14th, Thomas Augustine Dillon, F.R.C.S. Irel., L.R.C.P., Assistant Medical Superintendent to the Croydon Infirmary, aged 33 years.

GROGONO.—On Sept. 11th, at Witham Lodge, Romford-road, Stratford, Walter Atkins Grogono, F.R.C.S., aged 62 years.

Notes, Short Comments, and Answers to Correspondents.

AN EPIDEMIC OF SUPERSTITION.

THERE are worse visitations than those of Asiatic cholera or the pestis bubonica, visitations which, provoked by ignorance, superstition, and panic, play into the hands of disease itself by thwarting the measures adopted to combat it—nay, turning with savage vendetta against the sanitary officer and the practitioner, and forcing him, in self-defence, to resort to the lethal weapon—the *dernier ressort* of the individual threatened with loss of life by the "murderer with intent" or the man-eating beast of prey. Once and again the duty-doing medical man in Italy has had to use the revolver to protect himself against the individual or the mob who, under the delusion that he was causing the disease he was in the act of curing, have attempted to do him to death! And this in the twentieth century and in such centres of Italian civilisation as the Roman or the Tuscan Province! From Pisa I learn (writes an Italian correspondent) that in the neighbourhood of the marble quarries of Carrara a local practitioner, called to the bedside of a patient who showed symptoms of cholera, found the conditions such that an injection of caffeine was indicated. He was proceeding to act accordingly when the patient's brother threatened to kill him if he attempted the operation. This menace notwithstanding, the practitioner, seeing his patient in imminent danger of collapse, seized the opportunity of their being alone together and injected the stimulant. But its restorative action proved only temporary, and the patient, in spite of every care, ultimately expired. The brother, on learning that the injection had been practised, made straight for the doctor and shot him dead with one discharge from his revolver. The incident became immediately known throughout the neighbourhood, and the doctor's brother sought out the assassin, and with six shots from his revolver killed him in turn. To such tragedies has the "Third Italy" accustomed us during the epidemic of cholera now happily on the wane. Nothing more lamentable occurred in the successive visitations of the disease in the "sixties," the "seventies," and the "eighties" of last century—so little impression has the Government's system of education made on the populace under its control. In the southern provinces the recent outbreak of the disease provoked the peasantry to excesses described by a local resident as only to be paralleled by the reign of terror during the French revolution—storming the lazzarettos, driving away the *personnel* with threats of assassination, and dragging the patients out of bed when manifestly on the way to recovery or even when convalescent. But such acts as that above reported from Carrara were supposed to be impossible in Tuscany. In Leghorn the peasants refused to comply with the sanitary prescriptions or regulations; they ate whatever they chose; they resisted with violence all attempts to take them to the lazzaretto; and, shutting themselves up in their houses, kept the authorities in the dark as to the cholera-stricken among them. At last the said authorities broke into the houses by force—only to find in one tenement 26 dead bodies, some concealed in a wardrobe, and a child's corpse in a chest of drawers. The mortality is thus difficult to estimate; while of the cases duly reported to the sanitary office it is known that about 100 proved fatal per diem. The disease, as already stated in THE LANCET, affected the seaboard mainly, such cases as occurred inland being few and seldom fatal. With the return of the cooler weather the visitation is everywhere on the wane, and in the opinion of educated and enlightened Italy the next duty of the Government must be, not only to place the hygiene of the harbour towns and the great centres on a more satisfactory footing, but to urge on the provisions (effective enough on paper) for public instruction, and redeem Italy from the more than mediæval ignorance and superstition into which she has been allowed to lapse.

APPENDICITIS AND METAL DISH-CLOTHS.

A "Bluestocking-Housewife" writes:—"I read lately of an 'epidemic' of appendicitis in an institution for boys, which led to searching but fruitless endeavours to discover its origin. I understand also that doctors generally are seeking some domestic cause for the present prevalence of appendicitis. I would offer to their consideration the tinsel dish-cloths now so commonly used to scour the inside of saucepans and other utensils in which food is cooked. Of course, no particles of the scouring substance, be it monkey soap, sand, or metal dish-cloth, are supposed to remain in the saucepan. In theory all are swept out in the subsequent rinsing. In practice I am confident that, with the most thorough servant, such rinsing is neither forcible enough nor lengthy enough to dislodge them all, minute particles will be left in various crevices, such as the groove where bottom and sides of the saucepan meet. But the boiling of the next lot of food in the pot will set up far more searching and prolonged fluid currents; these will effectually sweep

out the tiny sharp bits of metal from their resting places, to mingle them with the food. Surely such metallic particles must be a grave source of danger to the delicate internal membranes of the body? I enclose a specimen of this little cloth."

The dish-cloth forwarded to us proved to be a network of fibre and copper filaments. The device serves as an excellent scourer, but whether it parts with its copper during the process we have not been able to decide. The point raised by our correspondent is of interest, and if there is anything at all in the mechanical theory of the origin of appendicitis the use of such a cloth would be open to suspicion. The scourer is new to us, and we are probably safe in saying that appendicitis was prevalent before this novelty was pressed into the service of cleaning cooking utensils. Copper is, of course, likely to prove an irritant, but we are not aware that the metal has been found in the appendix vermiformis.

THE CROSS-CHANNEL SWIM.

To the Editor of THE LANCET.

SIR,—It having been stated and advertised in the public press that during my Channel swim I partook of various forms of nourishment, I think it only fair to state publicly that my only food consisted of Swiss milk chocolate and a few grapes, and the leg of a chicken.

I am, Sir, yours faithfully,

T. W. BURGESS.

Lorne Cottage, Dover-street, Walmer, Sept. 20th, 1911.

A SAFETY HAT-PIN.

Mrs. Dunn, of Woodfield, Uppingham, Rutland, has invented a new form of safety hat-pin. This consists of two pins used as a pair, and so arranged that the head of one pin protects the point of the other pin, and *vice versâ*. Owing to the fact that the pins are equal in length, it would be difficult to manipulate such an arrangement if the heads were fixed. To overcome this difficulty one or each of the pins forming a pair is provided with a head which is hinged in relation to the pin proper. One of the pins having been inserted in the hat and hair of the wearer in the usual manner, the second pin is then inserted from the opposite direction so that its point enters the head of the first pin, after which the head of the pin last inserted may be moved so that it is thrust on to the point of the first pin. The pin-heads, which are hollow, are filled with cork covered by wire

gauze, which holds the point of the pin firmly. "It is clear, therefore," says the inventor, "that when in position the points of the pins are adequately and thoroughly protected, and further, that they are not likely to be accidentally withdrawn." The pins may be made of any length, and the heads of any suitable material ornamented in any manner desired. The inventor claims that it is only necessary to wear one pair of these pins with a hat, as any ordinary pin may be used if more than two are required, the point of this ordinary pin being passed into the head of one of the special pins. The real dangers to the community from the vicious spear-heads which radiate from the hat of the modern lady need no expatiation. Serious accidents have been chronicled, and many persons must have felt, when riding in omnibuses, for example, that a sudden jolt of the vehicle might cost them the loss of eyesight. The new fastener removes a public peril, and appears to us, while doing so, to leave the wearer in as good a position with regard to her headgear as if she were wearing the usual naked arsenal. The fact that a third pin can be introduced practically at any angle to either of the other two will give the security that two or more parallel pins could not give.

Senex.—The appointments are generally badly paid, and those that are not are difficult to obtain. The candidate should apply to the Pharmaceutical Society, 17, Bloomsbury-square, London, W.C., having just reached the necessary age.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for September and October, 1911:—

April–October.—Rome Exhibition (United Italy's Jubilee).
,, 29th–Oct. 26th (Turin).—International Exhibition.
May 3rd–Oct. 31st (Glasgow).—Scottish Exhibition.
,, 6th–Oct. 31st (Dresden).—International Hygiene Exhibition (British Section opens June 14th).
May 12th–Oct. 31st (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May 18th–October 31st (London, Shepherd's Bush).—Coronation Exhibition.
,, 19th–Oct. 31st (London).—Earl's Court Exhibition.
Sept. 16th–23rd (London, Agricultural Hall).—Nineteenth Annual Grocery Exhibition and Market.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–23rd (Paris).—International Conference of Genetics.
,, 23rd–Oct. 21st (London, Olympia).—Electrical Exhibition.
,, 24th–30th (Karlsruhe).—Eighty-third Meeting of German Physicists and Physicians.
,, 25th–26th (Munich).—Meeting of the International League for Medical Psychology and Psychotherapy.
,, 26th–28th (Louisville, Ky.).—American Association of Obstetricians and Gynecologists.
,, 26th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
,, 28th and 29th (Manchester).—Conference of British Hospitals Association.
,, 28th–30th (Dresden).—International Congress for the Protection of Mothers and Sexual Reform.
,, 29th (Edinburgh).—Association of Veterinary Officers of Health. Annual Meeting.
,, 30th (Bruges).—Sixth Belgian Congress of Neurology and Psychiatry.
September (Genoa).—International Exhibition of Marine Hygiene.
,, (Turin).—Congress of the Association of Italian Railway Physicians.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
,, 2nd–4th (Frankfurt-a-Main).—Fifth Annual Meeting of the Society of German Neurologists.
,, 2nd–5th (Turin).—International Congress of Pathology.
,, 2nd–6th (London, Royal Horticultural Hall).—Seventh London Medical Exhibition.
,, 2nd–7th (Dresden).—Third International Housing Congress.
,, 2nd–7th (Paris).—French Congress of Surgery, Twenty-fourth Annual Congress.
,, 3rd–5th (Turin).—Ninth National Congress of Medici Condotti.
,, 3rd–6th (London).—Dairy Show.
,, 5th–7th (Paris).—Fifteenth Meeting of the French Association of Urology.
,, 6th and 7th (Paris).—French Association of Pediatrics.
,, 9th–12th (Turin).—Twenty-first Congress, Italian Society of Internal Medicine.
,, 9th–13th (Cologne).—Seventh International Congress of Criminal Anthropology.
,, 10th (Paris).—International Sanitary Conference (to Revise the International Sanitary Convention of 1903).
,, 12th–18th (Rome).—Fifth Annual Meeting of the Italian Society for the Advancement of Science.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin).
TUESDAY.—4 P.M., Dr. N. Pitt: Clinique (Medical).
WEDNESDAY.—4 P.M., Mr. E. R. Carling: Clinique (Surgical).
THURSDAY.—4 P.M., Dr. F. J. Poynton: Clinique (Medical).
FRIDAY.—4 P.M., Dr. W. H. Kelson: Clinique (Ear, Nose and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Bishop Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Clinical Theatre, London Hospital, Mile End-road, E.

MONDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Wall: Pulmonary Diseases.
TUESDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Grünbaum: Diseases giving rise to Morbid Renal Excretion.
THURSDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. Head: Diseases of the Nervous System.
FRIDAY.—2 P.M., Demonstration in Clinical Medicine:—Dr. L. Smith: Diseases of the Heart.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.). Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (30th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

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Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1911, which was completed with the issue of June 24th, were given in THE LANCET of July 1st.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 20th, 1911.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 14	30·07	E.	0·43	100	64	57	56	59	Cloudy
,, 15	30·14	N.E.	...	110	62	48	51	54	Fine
,, 16	30 27	N.E.	...	112	63	48	51	54	Fine
,, 17	30 27	N.	...	91	62	46	50	52	Fine
,, 18	30·34	N.W.	...	109	68	46	50	52	Fine
,, 19	30 09	W.	...	107	69	49	52	55	Fine
,, 20	29·50	S.	0·13	101	66	55	60	63	Cloudy

The following journals, magazines &c., have been received:—Symons's Meteorological Magazine, Archiv für Experimentelle Pathologie und Pharmakologie, Report of the Bombay Medical Union, Cleveland Medical Journal, American Journal of Surgery, L'Hygiène, Prince Albert Hospital Gazette, Nordiskt Medicinskt Arkiv, Bulletin de l'Association Française pour l'Étude du Cancer, Philippine Journal of Science, British Journal of Dental Science, Gazette Médicale d'Orient, Pacific Medical Journal, American Journal of Obstetrics, Anti-Vivisection Review, South African Medical Record, Revue de Médecine, Revue de Chirurgie, Birmingham Medical Review, Revue de Gynécologie et de Chirurgie Abdominale, Heart, Interstate Medical Journal, Canadian Practitioner and Review, The Herb Doctor, Peru To-day, New Zealand Medical Journal, Yellow Fever Bureau Bulletin, and Australian Medical Journal.

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